ADVANCED MANAGEMENT

JUNE 1954

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the Honorable James C. Worthy

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Ready For Automation? . . .

THE low cost producer is always in an enviable position. His lead time on competition insures security and the time it will take others to attain equivalent low costs. This competitive lead time is being accomplished by many SAM members, managers through the philosophy of automation. These men have the courage and vision required to move their companies out in front in dramatic fashion.

Automation is here and with it some companies are putting others out of business. A dramatic example of this development came to light recently when a middle west manufacturer reduced his cost to produce a major part for jet engines from $1,200.00 to 90 cents, through automation. By the use of $500,000 worth of automatic equipment, integration of the machinery and handling, planning and management, 14 other firms were eliminated from competition.

Automation is not just an extension of present-day mechanical gadgetry or even of machines. Automation is a new technology, a new principle of production, a philosophical concept. It is due to this principle that it is important to every management man today. We must all be a part of this dynamic movement or find our companies competitively handicapped.

With such potential power behind this concept of automation, we can confidently expect lower production costs and the facilities to produce more volume—and a greater need for a new approach to mass distribution. Demands upon management will be greater also. Management vision and ability will be tested as much in marketing as in its competence to attain automation and therefore low production costs.

Sales support a company's growth and development. Sales-mindedness puts a solid floor beneath its growth. We can have confidence in an enterprise which is inspired by salesminded leadership.

Opportunities for leadership to increase sales capacity are unlimited. It is estimated that it costs American Business more than one dollar out of every three of estimated Gross National Product to distribute goods and services to the nation. Therefore, management has in the area of distribution freedom to increase sales capacity at lower cost.

To attain the full potential of automation and to create the customers and the markets for the expanded production, managers must have vision and ability. The development of more competence in our management team means a systematic program of performance training for everyone in the management group—and for those who will ultimately move into the management team.

Manager training is vital if men are to meet these demands upon management. SAM chapters today are a major asset to 58 business and industrial communities in meeting this need for more and more thoroughly trained management men.

BRUCE PAYNE, PRESIDENT, SAM

JAMES C. WORTHY, President Eisenhower's Assistant Secretary of Commerce for Administration, was Director of Employee Relations for Sears, Roebuck and Company prior to his present appointment on May 1, 1953. Mr. Worthy is a former president of the Chicago Industrial Relations Association, and a former member of the Employee Relations Committee of the Illinois State Chamber of Commerce.

Freedom Within American Enterprise

The Honorable James C. Worthy
Assistant Secretary
United States Dept. of Commerce

This article is taken from the author's address given at the SAM Time Study and Methods Conference in New York in April, 1954. The interest shown at that time was extraordinary; by some the author's approach was thought to be controversial. The article is printed here for the whole readership of Advanced Management, in the firm belief that controversy when well-founded, is the wellspring of the democratic process in both business and industrial management as well as politics

ONE of the acute ironies of modern times is that those of us who see most clearly the virtues of free enterprise, those of us who are quickest to leap to its defense, sometimes fail to realize the full implications of the system we are so anxious to preserve. It is easy for management to see the stifling effects of too much government control. What we often fail to see is that the essential principles we advocate for government apply equally to the organization and administration of business itself, and that the violation of these principles produces within business the same stifling results, the same frustration of spontaneous productive energy that their violation in the larger field of government policy produces within the general economic system. The essential principles of free enterprise apply not only in the politico-economic sphere, but equally in the internal affairs of business enterprise itself. These principles must be adapted to this specialized field of action. Obviously, they cannot be applied literally. Perhaps the greatest challenge of modern times is for creative business leadership which can develop within industry itself the methods of democratic organization and control which were worked out for the political state during the past 300 years.

II

One of the serious stumbling blocks to effective human organization is a deep-seated attitude of mind characteristic of our times. The physical scientist and the engineer have exercised a profound influence, not only on the outward aspects of modern life, but on our inward thought processes as well. Among other things, they have strongly influenced our thinking about problems of organization and human relations. The transference of their mode of thought to a field for which it was never designed has badly distorted our apprehension of our problems and seriously misdirected our efforts to deal with them.

If we consider closely our generally accepted theories of organization, we cannot help but note a curious parallel to the machine. Our ideal of an effective organization is a smoothly running machine, an organization in which all parts function smoothly, with a minimum of friction and a maximum economy of effort; a system in which each component is carefully designed for its particular task, and where the whole responds automatically to the touch of the operator's hand.

Our very phraseology employs mechanical images. Organization charts are frequently referred to as blue-prints. Management engineering has become an important and respected profession, and there is even a vogue for so-called "human engineering." All our thinking about organization displays a strongly mechanical turn of mind.

The nature of human organization cannot be properly apprehended in terms of mechanistic concepts. The machine and its component parts have only one purpose, that for which the engineer designed them. The purpose of a human organization, whether business or otherwise, can only be defined in terms of the people in it, because unlike the component parts of a machine the people who comprise a human organization are something more than just parts of that organization. They are flesh-and-blood men and women, with sentiments, ambitions, and needs of their own which range far beyond the confines of the organization of which they may be a part, and the extent to which they serve the needs of the organization willingly and enthusiastically depend upon the extent to which the organization serves their needs as sentient, aspiring human beings.

Viewed in these terms, the problems of economic organization and administration have a close parallel to problems

of economic organization and administration have a close parallel to problems of political organization and administration. In politics, we are all familiar with the ideas of the democratic and the authoritarian state. Despite our unshakeable faith in the superiority of democracy as a form of civil government, some managements apply strictly authoritarian principles in the administration of their business affairs, under the sadly mistaken notion that business and political life are two different orders of things. Actually, the two institutions, business and government, are closely similar in their most essential aspect; the fact is that both are organizations of human beings and that both depend on creative intelligence and effort, and on the voluntary support and acceptance of the people who comprise them.

One of the great paradoxes of our society is that, too often, we have failed to apply to the internal affairs of our businesses the principles we all recognize, when applied to political organization, as largely responsible for the tremendous growth in national wealth and the superb social progress our nation has enjoyed.

Some businesses closely resemble the authoritarian state in the sense that all direction, all thinking, all authority tends to flow from the top down. While the top administrator may delegate certain parts of his responsibility and authority, the delegation is largely in terms of those at lower levels of the organization merely implementing and effectuating policies and directives which have already been set up. While the over-all directive may be broken down into a series of parts, and parcelled out to different people, and while these people may be expected to show initiative, drive, and judgment in executing their work, their activity is essentially that of merely carrying out an order.

How Can This Organization Be Made To Work?

To make such an organization work, management is forced to set up a rigorous system of controls to see that things get done and to insure that people do not make too many mistakes in carrying out their orders. In other words, a minimum of reliance is placed on the people in the organization, and the system depends primarily on the initiative and judgment of those at the top.

A corollary to this tendency is the elaboration of staff organizations, because if the exercise of judgment and skill is largely reserved to top administrators, they must be assisted by specialized advisory staffs. The result is a further extenion of the system of controls through the efforts of the staff departments, as well as a considerable complication of the organization structure, thus leading to the necessity for more controls to hold the whole organization together and make it work. At the same time, because of the necessity for operating the controls and because people at each successive level must be closely supervised and directed in their work, the supervisory hierarchy becomes more and more extended.

III

What are some of the implications of this situation in terms of the people in the organization? Staff specialists and higher levels of management are likely to have a deep-seated feeling that supervisors can't be trusted to use good judgment at all times (and by "good judgment" they are likely to mean what they would do under particular circumstances). Therefore, they feel impelled to establish precise rules to govern every contingency, or to appropriate broad areas of responsibility from line supervision and vest them in their own departments—all for the purpose of guarding against the possibility of supervisors or line executives making mistakes.

First Requisite Is a Broad Framework of Policy

Certainly, some broad framework of policy is necessary within which the supervisor should be required to work, but the tendency has been to substitute an elaborate system of bureaucratic controls for the good judgment which should arise from the supervisor's own intimate knowledge of immediate situations. Even more serious is the effect of such minute controls in undermining the initiative and judgment of supervisors, so that ultimately their judgment really cannot be trusted because they have never had an opportunity to use it.

What is the effect of this elaborate system of supervision and control on rank and file workers? I refer you to the frequent and bitter complaints of management itself over the apathy of employees, their lack of initiative, their lack of interest in the affairs and problems of the enterprise, their antagonism to management, and so on and so forth. Rather than blame this state of affairs on agitators, or on faults in the educational system, or on errors in modern methods of raising children, many managements need only look within their own organizations.

In effect, all some organizations demand of their lower-level employees is their animal energies, their muscle power. It almost seems they have done everything possible, through too-close supervision, through excessively refined time and motion studies, through breaking jobs down into their simplest possible elements, and so on, to take all judgment from the operator, to relieve him of all initiative, to reduce his work to the lowest possible repetitive, mechanical level. These efforts are usually justified in terms of the supposedly greater efficiency which can come from shorter training time, the ability to use less skilled people, and the greater proficiency which can come from repetition of simple movements and operations. Granted all this, how much does industry lose in depriving the worker of all creative relation to his job? I hazard the guess that industry has lost far more than it has gained.

The attempt to use people as *means* rather than as *ends* (which is what this process implies) has alienated them from unity with management in the productive process. Their own labor becomes to them likewise a means: something alien to their real purposes and interests; something through which to procure the good things of life, rather than a good in itself; something to be given sparingly, as a cost.

This disparaging, necessary evil concept of labor is implicit in socialist and communist theories, and explicit in many of the practices of organized labor. One of the important reasons why this is so lies in the fact that business, under the influence of mechanistic concepts of organization, has consistently acted in such a manner as to deprive labor of much of its creative relationship with work.

One Supremely Important Result Of This Destructive Process

One supremely important result of this process has been to destroy the meaning of the job for the worker: the meaning, that is, in all terms except the pay envelope. It has had the equally important effect of seriously undermining the confidence of workers in management, and because they are restless and discontented they are easily subject to strong leadership which may arise in opposition to management. Their jobs have made so few demands on their higher faculties, they have had so little opportunity to think, to take initiative, to make their own contribution to the improvement of

their jobs, that when aggressive anti-management leadership arises, promising workers a kind of freedom that management has not provided, they readily respond. When this occurs, management is likely to react with surprise and resentment, but with little realization of its own responsibility for the widening gulf between itself and its workers.

There Is Yet Another, And Very Serious Consequence

A further and exceedingly serious consequence of the authoritarian system of administration is its tendency to inhibit the adaptiveness and problem-solving ability of the organization. Because judgment and initiative flow from the top down and because of elaborate systems of supervision and control, those at the low levels gradually lose their ability to solve the problems which confront them and their capacity to adapt to new situations. The processes of adaptation and problem solving thus tend to move to higher levels in the organization. As problems become more complex (often because they have been incompletely solved) corrective action must be taken at higher and higher levels and eventually must be dealt with at the top of the management hierarchy.

But this upward movement does not stop even at the top of the organization. In many cases, it tends to move right out of the organization itself to the level of the trade association or its equivalent, and from there often keeps right on moving until it comes to rest at the governmental level. This upward movement of the problem-solving process is a significant characteristic of management today. It is particularly apparent in the field of collective bargaining where frequently, at least in the past, the President of the United States has been forced to intervene personally in disputes between workers and employers. Because problems have not been handled effectively at their point of origin, usually at the lower levels of individual business, they have moved higher and higher and have become more and more complex until they can be dealt with only at the highest levels of the national government.

Management, of course, is bitterly resentful of this gradual encroachment of government into business affairs. But management itself must bear its share of the responsibility for this tendency because too often by its policies and its methods of administration it has stifled the adaptiveness and problem-solving ability of its own organization, and because in many cases it has created within itself an internal system of bureaucratic control that is fully as deadly for productive efficiency as governmental bureaucracies.

All of this has profound significance for the preservation of the essentials of democracy. Democracy depends on strong, self-reliant individuals, people who are capable of handling their own problems. It is a tragic fact that some of the methods of business organization have greatly increased the psychological dependency of members of business organizations, workers and executives alike. Through over-protection, over-specialization, and over-rigidity, business has very often hindered the processes of individual growth and development.

Hindering Effects of Too Much Specialization, Functionalization

Over-specialization and over-functionalization, in particular, have hindered the ability of people to handle their own problems effectively. High degrees of specialization are probably a necessary consequence of modern technology. However, the difficulties inherent in specialization of individual jobs are very greatly aggravated by the practice of groupings together in specialized functional departments individual activities which have themselves already been highly specialized. It is this practice I have in mind when I use the term "over-functionalization."

This is not the time or the place for a detailed discussion of this subject other than to call attention to the fact that, because of excessive specialization and excessive functionalization, a great many of the problems which arise at the work place can be handled only by resort to higher authority—for instance, to higher levels of supervision or management. Under such conditions, workers, foremen, and staff people are likely to work at such narrow, specialized tasks that they have effective control over only a few of the elements which affect their jobs. When problems arise, they must go to someone high enough up in the organization to be able to act on the situation. As a result, authority rather than mature self-reliance and a sense of personal responsibility comes to be looked upon as the natural means for dealing with problems.

Under these circumstances, it has been inevitable that large masses of workers (as well, let me repeat, as executives) have developed the characteristics of emotional and psychological dependence. It should not be surprising that many of them look about for someone on whom to lean, someone who can provide magical solutions to their problems, leaders who can point the way out—or, in more purely psychological terms, someone who can play the role of the good father and resolve the difficulty for his children.

This is a role that management is poorly suited to play, and large numbers of employees have turned to others, typically, politicians and labor leaders. This kind of solution not only creates difficulties for management, but is usually not very effective for the workers. Union organization or political action may provide a palliative but they cannot touch the heart of this particular set of problems.

I do not deny that both union organization and political action have important roles to play in their proper sphere. Neither approach, however, is suited to dealing with problems of the way work is organized and the relation of the worker to his work, and these problems are central to the task of strengthening individual freedom. These particular problems are simply beyond the reach of "political" solutions. Whether governmental, union, or otherwise, they have been largely created by business management and in a very real sense only business management can solve them.

IV

These are some of the problems American business management is facing today. What shall we do about them?

Part of the solution lies in developing a more adequate science of management, because many of our present difficulties are a direct consequence of the errors and misconceptions of traditional forms of "scientific management." We need a science of management that will not have the weaknesses implicit in the effort to apply engineering concepts to human organization.

Nevertheless, Some Important Beginnings Have Been Made

Important beginnings have already been made along this line, but a great deal more needs to be done. Any adequate science of management must be a science of human organization. For this reason, it is essential that full use be made of the bodies of knowledge and the special insights of the social scientists who are studying various aspects of the problems of human organization. More

than that: business must assist such scientists, not merely by financial support, but by presenting itself for closer study so that a larger portion of scientific effort may be channeled along lines of greater usefulness in dealing with the concrete problems of business.

The growth and wide popularity of so-called "human relations" is encouraging. It represents an effort on management's part to secure a better understanding of what is going on within its organization and to develop higher orders of skill for dealing with its immediate and long-range problems.

But in this connection, I would like to voice a special word of warning. There has been a tendency, in the last few years, to allow "human relations" to degenerate into a sort of "be nice to the guy" school of thought. Being "nice" to people is all well and good, but it is not enough. Sometimes management has to do things that are painful to people, and if its only hold on people consists in having been "nice" to them, it will not retain their loyalty or support for very long. Under such circumstances, in fact, people are quite likely to look around for someone else who promises to be "nice" to them. This "be nice to people" version of human relations is brittle indeed. It will not stand up against a blow of any real severity, and it will be repudiated by people and discarded by management with very little ceremony.

Any realistic science or philosophy of management must be tough-minded. There is a place in it for sentiment but not for sentimentality. It must be founded on fundamental Christian ideals, but like Christianity itself it must not mistake the easy life for the good life.

We in management are greatly concerned about the preservation of "free enterprise" and the "American Way of Life." In a real sense, much of our problem is this: We cannot preserve "free enterprise" as an economic system unless we adapt its fundamentals to the internal operation and administration of our own businesses. We cannot preserve "free enterprise" in the market place unless we strengthen it in the work place. We cannot preserve the American way of life unless we extend to our business structure the democratic ideals we take for granted in our political structures.

In the simple, agrarian society of Jefferson's day, political freedom was enough because, to a large extent, political freedom meant economic freedom as well. But as economic relations have grown more complex, political freedom alone has grown more and more inadequate. Political freedom as such has less and less bearing on the way a man makes his living. Political freedom is the starting point, the foundation, but political freedom alone is not enough in a world of complex social organization. Under modern conditions, political freedom, to be more than an empty phrase, must be enriched by economic freedom.

Management must recognize that the ways men make their living have a profound influence on all aspects of their living. Industrial experience can stimulate the development of human potentials—or it can stultify growth and stifle the human spirit. Industrial organization can enrich and embellish individually or it can degrade men and women to dull and common levels of mediocrity. Industrial practice can strengthen the under-pinnings of democracy—or it can riddle them to a hollow shell that will crumble at the first severe blow.

The problem is one of management leadership; only in part is it a technical problem of organization structure or administrative skill. Basically, it is a moral and an ethical problem. Simply stated, our task is to work out, in practical, realistic terms, the means for making industrial society the good society.

The challenge we are facing is no less than the preservation of all the things we value highest as Americans. If we can meet this challenge successfully, if we can develop ways and means for applying our democratic ideals more effectively within business itself, we will not only preserve our system but we can confidently expect a release of creative and productive energies which can be as great as those released by the rise of democratic states during the eighteenth and nineteenth centuries. Anything less than this will be tragically short of our historic opportunity. END

Three Compelling Reasons for Union Democracy

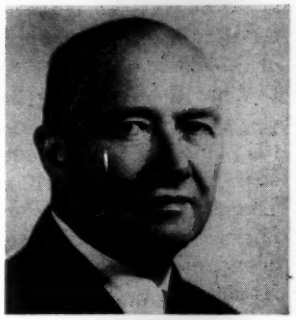
The widespread demand that unions should be "more democratic" has not always been accompanied by an explicit statement of why they should bear any heavier obligation than other organizations such as churches, lodges, or other private groups. . . . There are at least three compelling reasons why unions should have a special responsibility to maintain democratic standards.

First, a union in collective bargaining acts as the representative of every worker within the bargaining unit. It speaks for him, makes choices of policies which vitally affect him, and negotiates a contract which binds him. His wages, his seniority, his holidays, and even his retirement are all governed by this contract which becomes the basic law of his working life. . . . The union, in short, is the worker's industrial government. . . .

Second, unions should be democratic because the power which they hold over the individual worker is largely derived from government. Labor relations acts such as the Wagner Act affirmatively protect the right to organize and place the government's stamp of approval on unionization. . . . Unions, in the exercise of these powers derived from government, should maintain the same democratic standards required of government itself. . . .

Third, unions should be democratic because their principal moral justification is that they introduce an element of democracy into the government of industry. They permit workers to have a voice in determining the conditions under which they shall work. This high objective of industrial democracy can be fulfilled only if unions which sit at the bargaining table are themselves democratic . . . from *Democracy in Labor Unions: A Report and Statement of Policy* (New York: American Civil Liberties Union, 1952).

CLIFFORD F. HOOD, President of the United States Steel Corporation since January 1, 1953, has been a member of the Board of Directors and of the Finance Committee of that same corporation since November 25, 1952. Mr. Hood was the Executive vice-President in charge of Operations of the United States Steel Company, which was merged into the United States Steel Corporation at the beginning of 1953.



Competitive Desire: The South's New Industrial Spirit

by Clifford F. Hood
President
U. S. Steel Corporation

The burgeoning industrial enterprise of the southern United States is representative of a nation-wide commodity indispensable to business expansion and commercial development: the competitive desire to work and win, which manifests itself in the greatest individual and team competitors in sports and economic enterprise alike.

PROBABLY nothing has been a matter of such consuming public concern the world over during the past several months, as has the state of the American economy. In the last dozen years, through war and pitifully short interludes of precarious peace for this nation, the American economy has performed marvels of production, distribution and service to the American people as well as the world at large.

Those who are in positions that make it necessary to look out over the whole United States and consider what has been taking place during the past 25 years, have watched the renaissance of the South with the greatest interest. In a generation of more excitement than usual in public affairs, and one characterized by a larger proportion of the temporary and synthetic than usual, the South nevertheless is credited on every hand as having built solidly and made substantial progress.

To begin, the first thing I want to do is to congratulate the South for the constructive influence it has wielded in national affairs during the last decade. When a sufficient time has elapsed for a balanced interpretation of the history of recent hectic years, I am sure that the part played by Southern leaders in Congress and in community affairs in checking the socialistic invasion will be put forward prominently as acts of statesmanship of vital significance to the entire nation.

The fact is that the United States had a close call. It was taken on a long detour toward socialism. Although we have turned and now face toward private capitalism, it is a long way back. While rising above sectional interests and emotions, the South served in an important way to help hold the line against socialism. As a natural end result, the South made steady progress through its own very large addition to our national well being.

Many, here and abroad, now seem to take the attitude toward the American economy that a theatrical agent took toward a performer who wanted to be booked into county fairs.

"I climb a 100-foot ladder," said the performer. "I clamp a stick of dynamite between my teeth. I light a flare in each end of the stick of dynamite. Then I dive head-long into a tub of water only ten feet in diameter and four feet deep."

"Okay," said the booking agent. "But what do you do for an encore?"

Since the start of 1942, the eyes of America and the rest of the world have become accustomed to watching spectacular feats on the part of this country's profit-motivated system of private capitalism. Some of these spectators now seem to regard any performance which is less than sensational as a sign that our system has lost its vigor and vitality.

It would be entirely out of character for me to pretend to the role of business forecaster or an economic soothsayer. But I resent and deplore the apparent effort in some quarters to talk this country into a depression. There will be no depression if each of us exemplifies "individual responsibility and dynamic faith."

By a near miracle of economic transformation, the South has shifted in the short space of two decades from a position in which agriculture was foremost in providing the income of the region, to one in which manufacturing has moved ahead. In doing this the South has accomplished an increase in the share of the total income of the United States produced in the Southeastern states from 10½ per cent in 1929 to 13.7 per cent in 1949, or a relative gain of about one third. I expect that the percentage would be even greater if the figures could be brought up to 1954. To accomplish such an increase by itself alone was a great

achievement, and redounded not only to the benefit of the South but to the benefit of the entire nation.

What the foregoing boils down to is clear. There are two points. One is that the South has exercised effective and constructive leadership in national affairs. The other is that it has succeeded in large-scale upbuilding on its own account, and thus has enormously increased its stake in private capitalism.

To my mind, the very basis of this Southern strength is a new attitude, a new spirit in this section of the country, to be found likewise in many other parts of our nation. It is a vigorously competitive spirit. It is a spirit which can be likened to the quality in great individual and team competitors in sports that is called "desire." That does not mean acquisitive desire, it means the desire to win, the desire to improve. It is the will not to lapse into apathy and defeatism under the forces of adversity. It is the spirit which, in the political arena, has flamed against the use of excessively centralized government, and the use of socialistic schemes, as blunt instruments to reduce everyone to a dead-level mediocrity.

The South now has a greater stake than ever before in the United States as a whole, not only in continued support of the resistance to socialism, but also in prudent management of our national economy by means which will enable us gradually to work off our socialistic mortgages. Of course, it is imperative that we do not materially reduce our economic momentum. On the contrary, it should be sustained and increased if possible. In the final analysis, to keep this country going we must keep everything about it growing. It is a challenge that presents the opportunity for a whole new order of leadership and especially to that important part of the national leadership represented by the South. And growth means, and should mean, competition.

Vigorous Competition Is A Desirable Necessity

We in United States Steel, like every business, South, East, North or West, are engulfed in an atmosphere of competition. We know that there is more competition than ever. Competition is taking new forms. The vigor of competition is greater than ever. We in United States Steel could not get away from competition even if we wanted to, and we don't. Instead we wish to compete in order to remain virile and worthy of our task.

This same competition is found also in industrial development, among the different sections of the country and among states and municipalities within a single section. This, too, is in keeping with our system of freedom.

Sustained Effort Helps New Business Growth

Sustained effort by a city, a state or a region to attract new industry is an important ingredient in a dynamic economy since it helps new business to emerge and to grow. But that alone is not enough. The big job is to provide the kind of economic and political climate that offers the incentive to industry to prosper and to grow. That requires continuous intelligent interest in political affairs by all business executives. That means realistic taxation, not punitive or discriminatory taxation levied for one reason or another. It means the kind of taxation that does not obliterate the incentive of both employee and employer to produce and earn in a steadily more fruitful way. And it means the election of public officials who are chosen at the polls because of their integrity and competence. This applies with equal force to all sections of the nation. It has no narrow geographic limitations when it comes to the threats inherent in creeping socialism that confronts the entire nation.

The mark of Southern progress with which I am best acquainted is, of course, the record of the Tennessee Coal and Iron Division. Its official capacity at the start of 1954 was 3,831,000 net tons of ingots and steel castings—a rise of 44 per cent since the beginning of the year 1945. How well this bespeaks Southern industrial growth may be judged by the fact that in those same years the capacity of the steel industry as a whole rose by just a bit over 30 per cent. It is also noteworthy, and significant, that in the past year, when the production capacity of the American steel industry increased by a little under 6 per cent, that of T.C.I. rose by almost 11 per cent.

I am convinced that management men of the South will take the initiative, and will increase support of political representatives who are working for the development of private capitalism rather than collectivism, and will continue and extend the industrial progress of the South which has made such a fine beginning. In bringing new and diversified enterprise to its part of the country, the South has shown again the competitive spirit which is the hallmark of American progress. **END**

Growth of Business Ethics

Business is human activity or human conduct arising from the exchange of services or commodities. In early social phases, business was undeveloped. Not until a primitive folk group produced more of a certain commodity than it could use did it need to exchange. When that happened, business began to develop. This gave rise to barter, then a monetary system, or some other form of exchange. Business originates because of the excess product of industrial groups, and it is a potent factor in developing conditions under which economic subgroups are formed and maintained.

The vitality of business groups generally depends upon the incentive of profit or the margin of earnings above subsistence. As society grew, greater opportunities for both business expansion and profit grew. At the same time, there was in the United States a pioneering movement to the west, and concurrently, an increase in city life. By 1893, the United States' economic structure had grown from a series of simple territorial groups, united by needs of self-defense and self-development, into a complex series of interlapping business groups united by strong ties of economic interdependence. The incentive of greater efficiency in this movement influenced the progress of invention and the development of highly specialized business groups to perform the many business functions.

Since custom develops very slowly as a result of social changes from family groups to nations, it would be reasonable to expect that rules of conduct would develop even more slowly in the new business groups which represented an altered folk group structure. In America's early days, business was considered outside the province of respectable society, and men did not bring into business whatever high rules of conduct they might have acquired or practiced in their personal lives. . . . "Ethics for Modern Business Practice," edited by J. Whitney Bunting.

JAMES J. NANCE has had a thirty-year career aimed at industrial management, rising to executive level through marketing channels. At 52, Mr. Nance is in his second year as president of Packard Motor Car Company, nucleus of a revitalization program designed to bring his firm into vigorous competition for leadership in the automobile industry. His previous service for such firms as General motors, and Hotpoint well fit him for this challenge.

Rebuilding Distribution Is One Of Management's Big Modern Problems

by James J. Nance
President & General Manager
Packard Motor Car Company

The rehabilitation of distribution must be accomplished, says this author, in today's difficult era, when the consumer is challenging prices. This means that modern management must achieve efficiencies at the same time it rebuilds this important area of business. Distribution cannot, he emphasizes, be rebuilt on a foundation of government orders.

It is not news that the competition in business today is rougher than anything experienced since 1940. This is true of every business. It is very plain that management has reached one of those major economic turning points which occur only once or twice in every business generation.

All of us know why. Since 1941 the whole emphasis in American business has been on production because of war and the threat of war. First America had to build for World War II, then for five years we produced and expanded as fast as we knew how in order to meet the accumulated postwar demand. This demand had scarcely been satisfied when the Korean war required a new wave of expansion to create a dual economy to support both civilian and military needs.

As a result of these thirteen years of expansion, mostly at breakneck speed, we have plant capacity in this country today capable of producing military goods at the rate of $50 billion annually, and civilian goods and services at a rate of $325 billion annually. At this level of production we employ some 62 million people at record high wages, not only in dollars but in real purchasing power.

That is the measure of American industry's production capability. Right now we are in the process of trying to adjust to it. Some five months ago the automobile industry, which was the last producer of consumer goods to be released from government controls, filled its pipelines. Since then the steel industry has caught up. I am happy to be able to report to you that we now have steel salesmen—including vice presidents—calling on us asking for orders. That is a real switch.

Meanwhile defense buying has leveled off and is being reduced moderately. The general pace of the economy has slipped somewhat from the peaks reached in the boom, but it is still on a high plateau in terms of production, consumption, income, savings and just about every other yardstick. I believe we can keep it on a plane. We can only do so, however, by creating demand.

We operate today in a selling economy. I use that term to differentiate between two more commonly described markets: a "sellers' market" and a "buyers' market." In a sellers' market, purchasing power is in excess of production. In a buyers' market the opposite is true, capacity to produce exceeds purchasing power. In a selling or salesman's market we have both production and purchasing power in approximate balance at a high level. That is where we stand now.

So, gentlemen, American business has completed a cycle—from scarcity to abundance — from 1941 to the fall of 1953. That was the longest sellers' market in the history of America! Now it's ended. The period of adjustment has arrived.

Specifically, what is this adjustment going to mean to each business and each business man? First, I think it calls for a decision as to attitude. Do we want to stay in the game or do we want to take our chips and quit? Do we want merely to go along, not getting out but doing just enough, risking just enough, working just enough, to get by? Or do we want to put everything we've got into the deal and fight and work to grow and prosper and thereby contribute to a growing and prosperous economy?

Consciously or otherwise, every business man is going to choose one of those three courses. As I see it, 1954 will prove to be the year of decision for each of us as to what we are going to do to adjust to the first big and lasting change in the business climate in 13 years.

Some business men may think that there are greener pastures across the fence. This is a perfectly natural illusion

as competitive pressures tighten within each individual industry. It is, however, an illusion. The squeeze is on everywhere. There isn't an industry left that can be classed as a soft touch. Competition is universally hot.

However, the vast majority of business men are taking the adjustment we are entering very realistically. A comparative handful are considering drawing down their chips rather than face stiff competition, or are planning in terms of extreme caution with the idea of being as much on the sidelines as possible for a duration of the adjustment. Except for this handful, everyone in management to whom I have talked is planning aggressive action to stimulate his own market and to get a larger share of the total business. I have found no prophets of doom. There may be some in Washington. You would know that better than I. But among businessmen in the key industrial and trade centers I have visited the feeling is one of confidence that the adjustment will not be severe and will, in fact, be constructive.

To me this is significant. I believe that in a free economy the opinion of the majority will of itself have a great deal to do with controlling the future.

It is generally recognized, of course, that the correction will not affect all industries and all companies equally. Some industries and some areas which have been heavily dependent upon defense business, and some lines which depend upon market segments most favored by war conditions will feel the adjustment most severely. Naturally, this is not a pleasant prospect for them. But broadly it seems to be accepted as the expected and welcome result of a more favorable situation in the country's defense and international positions.

Plenty of Important Business Problems Remain

Let me say, however, that it is also universally recognized that business has some knotty problems to solve. Chief among these is the problem of rebuilding our marketing strength, which was so badly sapped by the 13-year sellers' market.

What happened in the automobile industry in the last four or five months of 1953 is to me a classic example of this problem. Many people asked me at that time what was wrong. My answer was "nothing except that our distribution system was not ready when controls were taken off and the industry's tremendously expanded production was turned loose." The result was what appeared to be general disorganization of the automobile market. We had overloading, overtrading, discounting and just about every other substitute for marketing. All of the old forms of razzle-dazzle were brought out of the closet and dusted off and some new ones were added. There actually was a one-cent sale in the automobile business, something usually limited to drugstore marketing.

Automobiles Had Sellers' Market Until 1953

What happened shouldn't have been a great surprise to anyone, however. We knew that until July or August 1953, the automobile industry had not had to sell its production for 13 years. In that time its marketing skills went to pot. New salesmen weren't trained to sell against real competition. Old-line sales managers passed out of the picture or became soft. Replacements were not developed. They weren't needed. Many dealers had come into the business since World War II. They had the asset of youth but they lacked the competitive experience to enable them to move the volume their factories can produce. Many did not and still do not have as much capital as they need. High postwar taxes have prevented them from accumulating it in the lush years when they normally would have. Many older dealers did not want to pitch as they did before the war. They had the capital but not the will.

I have cited the auto industry's experience because it is the one with which I am most intimately familiar. It is not, however, the exception. Rather it is typical of the marketing struture of American business today.

This may seem like a pessimistic statement. I see nothing in the situation, however, that a little time and a lot of work won't cure. When World War II came on production wasn't ready. We went through 18 months of painful adjustment before war material really began to roll from our factories. But production people, when given the job back in 1941, didn't quit and they didn't cry. They adopted the attitude that nothing was impossible. Valuable machinery was moved out into the yard to clear factory floors. Men worked around the clock and no problem was too big. New methods and new tools were improvised on previously unheard-of schedules.

As you and I know, all factories didn't make production goals—they didn't all fly the Army and Navy "E" for excellence. But the majority came through. And many businesses which were then new or small came to greatness as a result of their experience.

We are entering that kind of adjustment in distribution right now. This means much more emphasis on every phase of marketing from research on through to sales training.

It is my personal conviction that the greatest progress can be made in the shortest length of time in rebuilding selling strength at the retail or dealer level. I do not say this because I am at the manufacturing end of the marketing process. I say it because in the last analysis the only sale that counts is the one made to the ultimate consumer. This is the retail sale and it is almost invariably made by one person selling another through personal contact. Manufacturers have an important responsibility for providing training assistance, product information and promotional assistance. But the actual accomplishment of the job of improving retail selling rests with retail management.

Can Demand Be Created?

I am among those who believe that demand can be and is created for all types of goods above those needed for subsistence. It is the rare product, indeed, which, when new, meets any spontaneous demand. From the vantage point of 1954 we talk, and rather complacently too, about the revolution in the American standard of living since the turn of the century. Anyone of even early middle age has seen the automobile progress from a toy of the rich sportsman to a transportation necessity for almost 90 per cent of the families of the country. He has seen the vacuum cleaner, the washing machine, refrigerator, radio, and television pass from the curio stage to essentials of daily living. He has seen the cracker barrel replaced by the airtight cellophane packaged product and the cracker barrel's ancient companion, the pot-bellied stove, replaced by central heating, which itself is on its way to being supplemented by year-round air-conditioning.

Such progress did not come about merely because someone devised and learned how to produce something. Demand had to be created by salesmanship for practically every product associated with progress which you can name. Whether this is due to human inertia,

skepticism about new things, or conservatism, I do not know. I only know that progress has had to be sold.

This applies equally to selling replacements for established products. Shall a man drive his automobile one year, three years, or five? For most car owners the answer depends on an auto salesman. If he can create dissatisfaction with the old, he can make a sale. In our industry this process, when successfully carried out, works its way down through the used car market and in the end every auto owner has been upgraded. Each enjoys the use of a better car than he otherwise would have.

Price is a tool in this process. It is, however, only a tool, and a limited one at that. Before price becomes a factor in any sale a buyer must be made to desire something. If the desire is not there a sale can't be consummated no matter how strong an appeal is made to the bargain instinct. Moreover, a sale made at a price that does not return a legitimate profit not only hurts the business making the deal but everyone else in the industry. I mentioned a few minutes ago the soaped windows and one-cent sale which marked automobile retailing last fall. Already since the first of the year we have seen a return to sanity on this score. Automobile dealers are quickly improving their selling. It did not take long to re-prove the old principle that fire-sale methods, although they may temporarily move merchandise, are simply the short route to business suicide.

Selling Is Not A Form of Service

I have gone to considerable length on the subject of selling actually creating demand because there are still too many people who believe that selling is at best a sort of a service which brings together existing demand with production. In my opinion that attitude is a holdover from the handicraft days when shortages were chronic and it was literally impossible with the production abilities of the day to produce enough to satisfy even the minimum human needs. The development of mass production changed that picture completely. It made necessary development of the art of mass distribution. The two—mass production and mass distribution—are as inseparable as Siamese twins, and both depend upon demand creation.

Today we know we have the largest and most efficient physical plant for the production of goods in this nation's history. According to government statistics and surveys the American consumer is in an extremely strong financial condition. The two can only be brought together by distribution, the conveyor belt between production and consumption. After 13 years of disuse this is the one great weakness in our picture. The newer generation of businessmen must learn the arts of distribution, and the older generation must relearn them. New salesmen must be recruited and trained. The social and financial status of selling as a profession will have to be raised.

Retail Aspects Are Prime Factors

I realize, of course, that much needs to be done to improve our distribution strength at every level of business. If I have seemed to concentrate on the retail aspects of the problem it is only because they are so important. Through research we need to learn much more about what motivates buying and how to influence peoples attitudes and actions. We must improve the quality and forcefulness of our advertising and the appeal of our products within the limits that costs will permit.

Rehabilitation of distribution now must be accomplished just at a time when the consumer is challenging prices. This means that management will have to achieve efficiencies at the same time we are rebuilding. In other words, distribution cannot be rebuilt on a foundation of government orders the way much of our plant capacity has been built in recent years. The job must be done under the pressures of competition by hard work and ingenuity.

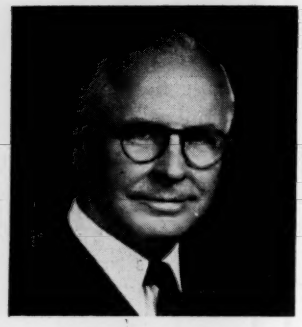
This is not an easy task but it is far from insurmountable. I am sure that it will be accomplished and in good time. Production was not found wanting in World War II and immediately after Korea. Distribution will not long be found wanting now that the economy is free, supplies are abundant, and there is both need and opportunity for initiative, imagination and energy in selling.

You may think that I am oversimplifying a complex economic equation. There are, of course, many factors other than selling to be considered. But we are surrounded by all kinds of evidence and statistics showing that the economic position of the American consumer is very strong. We have not had speculative excesses in real estate and securities as we had in the 1920's. We have not had a reckless over-extension of credit either to business or consumers. The over all economic picture is being buttressed by the tax reduction for individuals which has just gone into effect and by a marked easing of the credit stringency which made itself felt at the peak of the boom last spring.

There is one more business sentiment which I believe in the present situation is highly significant. There seems to be a general approval of the new direction taken by the federal government in the last year. There seems to be confidence that progress is being made in solving the many momentous problems which the country faces and which only government can deal with. The feeling is that Washington is doing its utmost to create a climate in which private enterprise can work out the economic adjustment occasioned by the checking of inflation and the end to a steadily rising volume of war business.

Adjustment Expected By 1955

It is my opinion that by the time 1955 arrives that this adjustment will have been largely completed. Business management will have met the challenge of rebuilding its distribution forces and the present imbalance between distribution and production will have been corrected. Over the longer range, the productive capacity we have created, great as it is, may prove low rather than high. The explosive population growth which has been in progress since 1940, and which is gaining rather than lessening, has tremendous economic implications. Our population recently passed the 160 million mark and projections of the Census Bureau indicate there will be 176 million people and six to seven million more families in the United States by 1960. If we are even to maintain our present standard of living this growth alone will call for more of everything—food, homes, schools, automobiles, roads, anything you care to name. The American people not only aspire to much more than mere maintenance of today's standard of living, they are counting on our American economy to provide it. So management must turn its undivided attention to the immediate challenge—the exciting job of recruiting dynamic distribution in America. Our opportunity has never been greater. Let's accept the challenge with faith and confidence in ourselves, and in our free economic system. **END**



CHRISTIAN E. JARCHOW, Executive vice-President of the International Harvester Company, entered the organization in 1914. In 1920 he was appointed general auditor, in 1927 advanced to assistant comptroller, and in 1936 to the comptrollership. He was appointed vice-President as well in 1943, and Executive vice-President in 1952. Mr. Jarchow has been a member of Harvester's Board of Directors since 1947, as well as the boards of several major American corporations. He is also associated with a number of business and professional societies.

How A Manufacturing Company Reorganized Its Management Setup

by Christian E. Jarchow,
Executive vice-President,
International Harvester Company

Every growing company faces a time when future existence may depend upon management's ability to reorganize. Many a successful company, large and small, needs to know just how a good modern organization is set up. This author took actual part in a complete redistribution of management authority in one of the great American corporations; his learning is of immense value to both middle and top management.

A CORPORATION is a fictitious person, but nevertheless a living, moving organism. Like any other living thing, it is difficult to outline its status at any particular moment without giving an air of finality to the description, a finality which does not exist.

This is a familiar situation to all of us in accounting. The balance sheet at the end of the fiscal year is true only for the few moments which follow the close of business on that day. By the following morning nearly everything is changed. This is true of almost any other picture we attempt to draw of the activities of a corporation, in words or in figures.

I make this disclaimer at the outset. I will give, to illustrate, some of our experiences in recasting the organizational structure of International Harvester Company during the last ten years. What exists at this moment is only an interim statement—a trial balance. It is not final, and cannot be.

Briefly, this is the type of organization the company had ten years ago.

International Harvester was a functional organization, the normal framework of the small or medium-sized corporation, and the form in which we had grown up. Our sales in the 1943 fiscal year amounted to $459 million and we had about 59,000 employes.

We had a president, two officers of general authority, entitled first vice president and second vice president, the latter having charge of sales, and eight vice presidents and a secretary. All reported directly to the president.

The responsibilities of the eight vice presidents were these:

One (1) had law, one (2) directed steel, mining and other raw materials operations. One (3) was in charge of engineering. One (4) was in charge of the treasury. One (5) was the comptroller. One (6) supervised purchasing and traffic; another (7) had charge of foreign sales; and the last one (8) had charge of manufacturing.

Their burdens were heavy. They were not only policy-makers but they were responsible for operations. Take the manufacturing vice president. He was directly responsible for the production of every Harvester product, whether made in this country by the parent company or manufactured abroad by a subsidiary company. He also was responsible for labor relations, personnel, and the design and construction of all manufacturing facilities.

The subject of possible reorganization and decentralization had been under discussion for a considerable time. Simultaneously, we had at work a post-war planning committee which was considering future products, future plant sites and many other matters, all connected with growth and expansion of the business.

The more we discussed these matters, the plainer it became that we would need major changes in organization, if we were to carry out successfully the plans we were making. The size to which the company had grown imposed a heavy burden on its executive group. We knew we were about to grow, and to do it rapidly. We knew we would have even greater variety in our lines of product. Moreover, we were at that time at war, and were responsible for the completion of many war contracts; all of which increased the complexity of our business.

We had previously discussed the possibility of meeting these problems through a divisional type of organization, with sharper separation between line and staff responsibilities. We now agreed to attempt to follow that route.

There were three major reasons for undertaking the divisionalization of the company:

First: to reduce the number of burdens our officers and top executives had to carry; to move the process of making

operating decisions further down the line of command; closer to the point where operations were actually carried on.

Second: we were conscious that because of sheer size, a certain lack of coordination had begun to appear. Men in different functions, who should have worked closely together, were being forced apart. So we were interested in improving coordination of functions.

Third: we knew that we were going to need more executives of tested ability and broad knowledge. We believed the divisional form of organization, by placing more men in positions of sizable responsibility, would yield an increased number of skilled executives.

Those were our objectives when we set out to create the operating divisions. Now we needed to understand each other.

What is a division, as we use the term? A Harvester division is a group of people, trained in different functions, who work together as a team to design and manufacture, and in some cases also to sell, a particular line of products. The division is built around a product line. Depending on whether or not they had a sales function, we classified divisions as complete or partial divisions.

We had a problem in relating divisional organization for engineering and production to our selling activities. We had a great variety of products but we sold most of them through a single dealer organization. A dealer might have our motor truck contract, our farm equipment contract, our twine contract, our industrial power contract. Usually, he had more than one. Since we planned on adding a refrigeration line, it was evident that each division could not have its own selling function without reducing our dealers to a state of complete bewilderment. So we recognized at the outset that most of our divisions would have to market their products in the United States through a common selling organization.

Ten Major Divisions Set Up in 1943

We established during the years 1943 and 1944 ten major operating units or divisions which were as follows:

1. Motor Truck Division
2. Farm Tractor Division
3. Farm Implement Division
4. Industrial Power Division
5. Fiber and Twine Division
6. Steel Division
7. Refrigeration Division
8. General Sales Department
9. Canadian Operations
10. Foreign Operations

We began divisionalization in December, 1943, when we announced the creation of the Motor Truck Division as a complete division. We could include the selling function here because we ourselves had extensive retail operations, and because we did have several thousand dealers with only motor truck contracts, as well as dealers who combined motor truck retailing with our other contracts.

Five Divisions Added To Original Ten

Within a short time (little more than two months) we established five more divisions. These were: Farm Tractor Divisions, Farm Implement, Industrial Power, Fiber and Twine, and the Steel Division.

Of these, Steel and Industrial Power had their own sales departments. The Steel Division was already in existence and presented no dealer problem. We had been making steel and related products not only for our own use but for the open market. Industrial Power's basic selling setup was the industrial power distributor, covering a state or several states; a much larger and different sort of business from that of our usual dealer.

The other divisions, Farm Tractor, Farm Implement and Fiber and Twine, were primarily engineering and manufacturing organizations. They sold their products to our General Sales Department which was a separate division, buying from the manufacturing divisions and selling to dealers (a wholesale distributing organization).

A typical division, from a management standpoint, consisted of a general manager at the head of the division, several managers of functions—manufacturing, engineering, supply and inventory, a divisional comptroller and—where there was a sales department within the division—a sales manager.

The rank of general manager of a division was immediately below that of an officer of the company. The head of a division may also be, or may become, a vice president, but the basic idea is that a division is headed by a general manager.

At the same time, and for the same reasons that we were forming these first six divisions and creating the General Sales Department, we also placed our Canadian subsidiary company on a highly autonomous basis.

While these things were happening on the operating side of the business, equally far-reaching changes were being made on the staff side. We tried to bring about a separation between line and staff functions as well as to re-group some of the staff activities in a better way.

First, we created a vice presidency which we called Merchandising Services and placed under it all the activities related to sales, other than direct selling itself. We combined product advertising, sales promotion, market analysis and other things into what we called the Consumer Relations Department. We took jurisdiction over dealer contracts and the setting of prices from under the sales function, and formed the Price and Contract Department. We formed a new function called the Sales Operations Research Department to study all the physical questions of merchandising and sales outlet locations. We added the existing Credit and Collection Department. Those four things became known collectively as Merchandising Services.

Supply and Inventory Unit Established

We also created a vice presidency called Supply-and-Inventory. It was the function of Supply and Inventory to make estimates of demand for our products, to place manufacturing orders on the divisions, to coordinate the control of inventories of raw materials and work in process, and (after manufacturing was completed) to control the inventories of finished machines and parts until they reached the hands of dealers or ultimate users.

These two functions, Merchandising Services and Supply-and-Inventory, were the principal new staff groupings. In addition to them, we continued with such staff functions as engineering, manufacturing, purchasing and traffic, law, treasury, accounting, public relations, and the secretary's office. We continued these, but with a difference.

The vice president of engineering was no longer responsible directly for the design of products. (That was the duty of divisional engineering.) He became a staff officer and was responsible for engineering policy and was available for advice and consultation to the divisional groups as well as for refereeing any disputes that might arise among them. This was also true of the duties of the manufacturing vice president who added to these duties the new function of manufacturing research.

That is where we stood in February of 1944. It will be obvious that we had bitten off a good deal in a short time. But we were not yet finished. In July, 1944, we formed the Refrigeration Division, which was not only a new organization but substantially a new line of products, except for some milk and beverage coolers we had made before the war.

At the same time we also relieved the manufacturing vice-president of his responsibilities for labor relations and personnel functions and created a new vice presidency, that of Industrial Relations. As a part of this, divisional managers of industrial relations were also created.

In August, 1944, the vice-President in Charge of Foreign Sales was changed in responsibilities and became the vice-President in charge of Foreign Operations. Now he was charged not only with selling overseas, but with all the other functions involved, manufacturing, engineering, finance, and so forth. For these purposes, he was given a staff somewhat similar to a divisional staff, except that it included not merely the operating but also the staff functions. He and his group now serve the foreign subsidiaries (except the Canada Company) in exactly the same way that the Chicago general management serves the operating divisions of the parent company.

The establishment of Foreign Operations completed the organization of the ten operating units or divisions. All of these are still functioning today as planned.

Two Problems Arise In Reorganization

Two things will be immediately obvious: two central problems in getting this new organization to work most effectively.

The first was the problem of high command. In taking the load of operations off our vice-presidents we had achieved a part of our purpose. We had made staff officials of many of them. At the same time we had increased the burden on the president. All the officers and the new general managers reported directly to him. In December, 1943, 11 officers reported to the president. Two years later, 17 officers, 4 general managers, and the director of public relations (a total of 22 top officials) reported directly to the president. His span of control was strained to the breaking point.

Part of this same problem of high command was communication and coordination as it affected the principal management group. We had succeeded in coordinating the functions from the divisional level down. It was by no means certain that we had coordinated the expanded group of officials from general managers up, except that the president might now know what they were doing.

The second question was the problem of powers and duties of a divisional general manager, the powers and functions of the staff departments, and the relationship between line and staff people. Among this large group of new officials, who could give orders to whom, and on what topics?

First the problem of high command.

Communications To President Simplified

When the divisions were established, too many individuals were reporting to the president. In about two years, it was evident that action was needed, which involved a recasting of the top management structure.

The old positions of first vice-president and second vice-president were abolished. Three executive vice presidents were appointed. Their duty was to assist the president in the management of the business in such matters as might be assigned to them by the president. One of them was designated to perform the duties of the president in his absence.

As the executive vice-presidencies exist today, the men who occupy them usually have quite different backgrounds. The senior among us came up through sales and was once head of the Motor Truck Division. By designation of the president, the vice president of Merchandising Services and the vice president of General Sales now report to this executive vice-president. He also is a court of review for all sales problems that may arise in the Motor Truck or Industrial Power sales departments. In addition, he is the point of contact for the Canada Company.

The next executive vice-president was trained as an engineer. He once served as managing director of the Australian subsidiary, was later head of the Farm Implement Division and vice president of Foreign Operations. Today, the vice-presidents of Engineering and Manufacturing report to him as do the heads of the Steel and Fiber and Twine Divisions, and he is a control point for all manufacturing and engineering problems arising in or between the divisions.

The third executive vice-president is an accountant by training, formerly vice-president and comptroller. To him now report the present comptroller, the vice-president of Supply and Inventory, and the vice president of Purchasing and Traffic.

Meanwhile, we had adopted another device as an aid in the problem of coordination and control. This we call the Operations Review Committee.

In essence, it was originally supposed to be concerned with reviewing the performance of the ten operating units with respect to the financial conduct of their affairs, profit planning and return on investment, inventory control, prices of our products as compared with competitors', cost and expense ratios, receivables, and other related matters. It was to conduct such review four times a year for each division.

The original personnel of the committee consisted of the senior executive vice-president as chairman; the comptroller; the executive vice-president concerned with manufacturing and engineering problems; the vice-president and treasurer; the vice-president of merchandising services, and a retired vice-president and treasurer who continues in the management with the title of senior consultant.

Review Committee Screens Divisional Functions

The work of the Operations Review Committee was to screen the activities of the divisions from a standpoint of financial control and earnings, and to report to the president.

As it developed, the committee's nature and function was modified at every point. To catalog the changes from the original concept:

Its personnel has been enlarged to include all three of the executive vice-presidents; the vice president and general counsel; the vice-president of Supply and Inventory; and the vice-presidents of Engineering and Manufacturing, in addition to those previously named.

Its function has grown beyond the financial sphere to include a wider review of actual operating problems and policies of the divisions.

Because its work has become broader in scope, more time for preparation and meeting has been required, and the periodicity of the reviews was altered from quarterly to three times yearly, and most recently, to twice yearly.

Finally, its work has been of such interest to the president that, rather than await reports from the committee, the president himself attends all sessions.

The virtue of this committee is that it brings the attention of the top management into concentrated focus on the affairs of each division at regular intervals and thus helps to give unified direction to divisional planning and operations.

How Much Power To Divisional Manager?

Now for the question of how much autonomy should reside in a general manager of a division and what powers and duties were to be withheld from him.

This problem was determined by the day-to-day development of a pattern of accepted conduct. It was affected to some degree by the personalities and temperaments of individuals.

The problem could not be solved by words, nevertheless, the idea we started with ran like this. A general manager was autonomous in managing the affairs of his division, but always within the framework of general Company policies laid down by the president and staff officers.

Somewhat like the framers of the Constitution of the United States who provided that the powers not delegated to the central government were reserved to the states, we took the general position that a divisional manager had all powers not specifically reserved to the staff or general managements.

Some of the important powers reserved were:

The power to control divisional expansion. This is exercised through control of the purse strings of the company by the appropriation procedure. Any appropriation request for capital expenditures of more than $10,000 must be approved by general management; major programs must be approved by the Board of Directors.

The power to control the level of production. This is exercised by staff people working under the vice-president of Supply and Inventory who initiate manufacturing orders and revise them from time to time.

The power to make purchase contracts for basic raw materials like coal, or major components such as rubber tires, transmissions, axles; things which are used by several divisions and which can be handled more effectively by central purchasing.

The power to set prices and terms for the sale of products and the power to set policies for the distribution of the company's products. General management reserves the power to approve or disapprove selling expense budgets and through this control sets limits on the amounts to be spent for advertising, sales promotion, etc.

The power to set basic labor and personnel policies. This is exercised by the vice-president of Industrial Relations who through his staff assistants negotiates major labor contracts with unions which represent more than one group of Harvester employes, and also administers company-wide wage and salary policies and rate ranges.

The power to set accounting policies and procedures. This is exercised by the comptroller and his assistant. Its purpose is to make certain that proper controls are enforced for the safeguarding of the company's assets and also to make certain that divisional results, when combined into totals for the company, will satisfy the requirements of reporting to the company's stockholders and to various government agencies. This includes, of course, income-tax figures compiled for the Bureau of Internal Revenue.

The appropriation control procedures also establish controls over the introduction of new products since this would normally require new capital investment. They also permit control of the extent to which components of the Company's products shall be manufactured within the Company's plants or purchased from outside sources.

Policy Determination Left To Central Management

In most instances, the powers reserved for the central management were those which involved the determination of policy or the adoption of procedures in matters which would affect the entire company rather than just one of the divisions.

The personalities of the people and the nature of the problems enter into the degree of autonomy. Some of our divisions have greater freedom than others, either because circumstances have led to that result, or because they have taken the ball and run with it.

Ours was for many years a company organized by functions. It is natural that we have staff departments which still wish to issue orders rather than give advice to operating people. Our staff departments as a group are much older, more certain of their areas of activity, than our divisions. It is also natural that some division heads may be less forceful than they perhaps ought to be in dealing with staff officials.

The higher management were all raised in a company where the function of such men was to make the decisions. It may be true that we are prone to receive and decide questions which we should push back to the divisional people or to other executives down the line.

But we haven't always had time to stop and review because our company keeps growing and changing. To note just a few of these things that have happened since 1946, when I dropped my chronological record of changes, here are some of the high points:

350 Million Spent On Expansion

We have bought or built, tooled and brought into operation, four large new manufacturing plants and two smaller ones; a manufacturing research operation; a large new motor truck engineering facility; 11 service parts depots in various areas of the country, and a number of other facilities. We have spent about 350 million dollars on capital expansion.

Concurrently, we have acquired two domestic subsidiary manufacturing companies—the Metropolitan Body Company, making motor truck bodies; and the Frank G. Hough Company, making a line of earth-moving and materials handling equipment.

We have devised and put in operation new staff functions such as Education and Training, Wage and Salary Administration, and the Standards and Methods Department.

We have created an important subsidiary, International Harvester Credit Corporation, to finance notes from our dealers and from users of our products.

We have added new products and redesigned many of our older products.

So we have been busy and great changes have taken place.

For our 1953 fiscal year, which ended October 31st, we had total sales of $1 billion 260 million, as against the $459 million of 1943. We had approximately 90,000 employes as compared with 59,000 of 1943. Our total number of share owners had risen in the same period from about 37,000 to about 84,000; our equity capital invested from $448 million to $705 million.

We do not see how we could have met the challenge of growth under our old form of corporate organization, and we therefore believe that divisionalization has been good for us and has been, on net balance, a success. END

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Non-Financial Incentives: A Management Motivation Analysis

by Eugene J. Benge
President
Benge Associates

This article won for its author the Society for Advancement of Management's coveted Industrial Incentives Award for 1954. It is a searching delineation of one of management's often neglected and important areas. In a time when all management is divided between the separate pulls of budget considerations and productivity problems, this article gives a thought-provoking description of a potent management force

It is the viewpoint of this article that

1. The work situation presents a great many opportunities for the exercise of non-financial incentives.

2. The proper utilization of incentives results in higher morale on the part of the worker and also greater productivity.

3. Vigorous action on the part of management to apply these incentives will help to maintain management in the leadership role.

4. Non-financial motivation depends on the joint functioning of dominance and submission urges.

These viewpoints have crystalized from 34 years of intimate contact with employee relations. The first 19 of those 34 years were spent in personnel department activities; the last 15 have been spent as a consultant in human relationships in industry.

The theses here presented did not spring to life suddenly but rather have been evolved through painful trial and error, through observation, through analysis and statistical research. Some of them have been presented to the writer in interviews with employees either seeking opportunity or disappointed that opportunity had failed to come; and in interviews with employees and others seeking vocational guidance. Some have come as a result of attitude surveys in small and in large companies, covering several decades in all parts of the country and in many varied types of commercial and industrial organizations. Some parts of these four viewpoints are by-products of conducting searches for talent, again over a long period of time in many types of companies.

Employee motivation depends upon two inherent principles:

1. Some people want to dominate most situations.

2. Most people want to dominate occasionally, but are content to be undominant in most situations.

These two principles imply that a person can get satisfaction from assertion of his own dominance, or from submission to the leadership (dominance) of someone else. Likewise he can get dissatisfaction from failure to display some desired dominance or from failure to receive proper leadership. Here are the possibilities:

1. The given person encounters a situation where he wants to be dominant, does dominate the situation; the results are Satisfaction.

2. The given person encounters a situation where he wants to be dominant, he fails to dominate the situation for any cause; the results are Dissatisfaction.

3. The given person is content not to try to dominate, the situation forces him to try to dominate; the results are Dissatisfaction.

4. The given person is content not to try to dominate, someone else accepts leadership responsibility, and does it well; the results to the given person are Satisfaction.

Stated as abstractions, these ideas seem remote from reality, or of little use in the industrial work situation. Yet perhaps all the trouble a supervisor has in handling subordinates and associates stems from violation of the two simple principles stated above. The executive of any level who understands the ramifications and applications of these two principles in his particular jurisdiction will provide positive leadership to his subordinates.

Dominance and submission are normally supplementary, rather than antipodal or antagonistic. That is, they can exist side by side, without clash. The auto driver is dominant as to driving, but submits to the traffic rules. The toolmaker controls the steel he is using but accepts the blue prints he is to follow. The foreman submits to the production schedule laid down for him, tries to exe-

cute it through equipment, materials and personnel.

Trouble often ensues when an individual reverses his correct role for a given situation: the motorist tries to make his own traffic rules, the toolmaker thinks he knows better than the engineering designer, the foreman rejects the production schedule or simply fails to take actions on it (i.e., is submissive rather than dominant).

Dominance and submissiveness take many forms, as suggested in the lists below. These lists are not intended to include all forms, but probably cover most which will be encountered by a supervisor.

DOMINANCE	SUBMISSIVENESS
Job title	Prayer
Promotion	Religious ritual
Pay increase	Good citizenship
Election to office	Following social custom
"Power behind the throne"	Affiliating with some group
Winning a competition	Obedience to others
Praise	Seeking authority
Creating a plan	Following a leader
Creating a specimen of workmanship	Accepting a new belief
Addressing a group	Currying favor
Acquiring possessions	Following an established routine
Most forms of display	Sacrificing for others
Recognitions and honors	Assisting
Seeking danger	
Special assignment	
Member of a special committee	
Protecting a family	

Dominance is the urge to ascend over others, to boss them, directly or indirectly (such as being the power behind the throne). Some persons manifest the dominant urge most of the time showing it as bossiness, insistence, conniving or other devices for getting their way. Some persons exert it only in specialized situations; few if any persons are so lacking in this urge that never once in their lives do they come into a situation where they do not try to be dominant. Mr. Milquetoast may try to have the best stamp collection in his community; Mrs. Milquetoast may try to win the pie baking contest. Some adults, unable to compete with other adults, exercise their dominance with children or social inferiors. Few adults are so rash as to attempt to exercise it in all situations; the great captain of industry on a storm-tossed sea does not want to take the helm away from the captain of the ship. And if they are shipwrecked and tossed upon a desert island, the chief engineer of the ship is likely to become the dominant person in the temporary colony which has to be established. We can virtually set up a principle; some people want to be dominant most of the time, most people want to be dominant some of the time.

Dominance may be asserted over:

1. Natural forces—sun, wind, wave; expansion of gases, etc.
2. Materials — metals, chemicals, etc.
3. Vegetable life—crops, forests, etc.
4. Animal life—herds, flocks, pets, etc.
5. People.

The first four of these accept dominance with little or no resistance, but it requires a high level of understanding and skill to exercise it successfully and repeatedly on other people.

The tools of dominance are principally:

1. Physical force
2. Inherent or habitual relationship (master-servant, parent-child, sergent-private)
3. Logical persuasion
4. Emotional appeal

Combining the tools and objects of dominance, we get the following:

We normally use physical force for dominance over natural forces, materials, vegetables, life and animal life. We normally use inherent relationships, logical persuasion and emotional appeal for dominance over people.

Foremen and executives should be on the lookout for those areas of endeavor where certain employees and particularly employees with good potentiality, want to be dominant. As a guide in looking for such areas of dominance, it should be realized that dominance is likely to be expressed through one or more of four media:

1. Working with people
2. Using ideas
3. Manipulating figures
4. Working with physical objects

After a supervisor has determined the general medium through which an employee seems to want to express himself (that is, one of the four above), he should next try to determine whether the employee is creative through that medium or initiative. Rather a small percentage of people are truly creative in their respective media. Obviously a person who wants to be creative in human relationship, for example, is worthy of managerial attention. That person is likely to be a leader or to make an excellent supervisor or a salesman.

Creative talent in working with ideas is likely to result in an advertising copy writer, an editor, or some one gifted in compiling reports or public relations material. Creative talent in working with mathematics suggests research and analysis, especially into difficult areas or subjects, or with difficult mathematical procedures. Creative talent in working with physical objects suggests a designer, a tool maker, an inventor, a production engineer, a packaging engineer or construction supervisor.

Many of our merit rating plans pass judgment upon an employee's performance as to quality or quantity of work but we might do better to pass judgment upon what he wants. If he is not getting satisfaction of his fundamental wants from the work situation, the quality and quantity of his work may be poor; conversely if he is transferred to work where he can derive these satisfactions, his job performance may improve appreciably.

Submissiveness does not mean something negative. In order for our society to be orderly, most of us submit to situations most of the time. This is true when we are at work, or driving in traffic, or participating in various organized group activities. The democrative form of government through elected representatives is in itself a form of group submission. In fact, throughout life submission is the rule and not the exception.

Submission implies leadership. There is no leadership without the consent of those led, and conversely there is no submission unless there is something or some person to be submitted to.

Submission is normally a passive form of contentment which becomes more active when the nature of the submission enters into the consciousness of a person. Submission to a God through prayer is an adventure in contentment. But submission to a general in a battle

is likewise a source of satisfaction. One is passive, the other is active.

The lesson to be learned by industry is as John Dewey puts it that "People believe to the extent that they participate."

Participation is an active submission. It requires that the person doing the participating understands such things as the objectives of the effort and that he considers those objectives worthwhile; that he understands the procedures which will be followed and feels that his part in these procedures is essential and important.

Participation appeals to both the dominance and submissive urges and is therefore to be commended on both counts. It is likely to be a form of recognition. Other recognitions (titles, honors, awards, praises, etc.) appeal to dominance urges.

Communication is principally the means to submission on the part of the person reached (as in informing employees about new plans). But it can open up dominance satisfactions (as in suggestion systems). Moreover by assuring employees that rapport exists between them and their superiors, communication of itself is a stimulus to both dominance and submission desires.

Some time tested devices are successful because they appeal to dominance or submissive urges in employees, or to both. (See table at right.)

Since motivation appeals to, or arouses, a state of mind, all motivation is really non-financial. Pay plans and fringe benefits offer incentive only insofar as they appeal to these states of mind. In the employee's thinking the possibility of extra pay moves him to higher effort because of the satisfaction he hopes to buy with it.

In the spring of 1953, a well known life insurance company decided to upgrade its whole employee-relations program.

An attitude survey revealed, among other things, that employees felt that:

1. They had higher abilities than demanded by their jobs
2. Internal promotion should be practiced more
3. There were many inequities in salary rates
4. The whole wage level was low
5. Promotion and pay increases should be based on merit rating
6. Some management policies and regulations were not fully understood
7. There were possibilities for improvements in working methods.

A search for talent followed. One hundred and sixty of four hundred and fifty home office employees volunteered to undergo a series of aptitude tests. From this group the top fifty were selected as a talent file to be given special training and to be drawn on for more promotions.

Six months later, a second search was offered. Thirty-eight employees volunteered, and nineteen of them qualified for the same standards as the original fifty. The company had now 69 persons of talent, most of whom had already been recognized, but—and this is important—a dozen persons were uncovered by the two searches whose names had not heretofore come to the attention of management.

Each time a promotion is made from the talent file, publicity is given to that fact in the employee paper.

A job evaluation committee was appointed, with employee representation included. This committee considered various plans, finally chose the factor comparison method for evaluation jobs.

A survey of rates in the area was made, using jobs comparable to those found in the insurance company.

A merit rating committee was established, again including employee representation. This committee developed a rating form, developed instructions for its use, undertook the necessary training of supervisors.

A third committee went to work on an employee handbook, undertaking to reduce to writing a great many policies and practices. When completed, this material will be printed as a booklet, distributed to employees.

Added attack was made on methods improvement through an existing staff department, which heretofore had encountered considerable resistance to its suggestions. Within a few months results began to pile up. One large department increased its productivity per employee almost 50 per cent. Two large files were combined, with a saving of six thousand dollars. In itself, this saving was more than enough to repay all the outlay for other studies.

By this time, employees and management alike were stimulated by the new order, made possible by the blessing of a newly elected, young and progressive top management. Case hardened department heads began to offer constructive suggestions; supervisors, long resigned to inertia, took new hope.

1. Employees desire recognitions and participations, the chance to lead, the more usual opportunity to follow.
2. Desire for display of dominance may manifest itself in many different ways. It is the duty of a superior to discover what these ways are for each subordinate, and to try to satisfy them in the work situation.
3. When following (which means most of the time) employees crave a strong and easily observed leadership.
4. Leadership should appeal to as many aspects of "followersh:p" as possible through clear and worthy aims; planned and understood procedures; specific directions which tells who is to do what, when; continuing coordination; and adequate control. END

	APPEALS TO EMPLOYEE		
	Dom.	*Sub.*	*Both*
1. An organization chart			X
2. Written responsibilities and authorities			X
3. Standard practice instructions as to working methods		X	
4. Training for an especially selected group			X
5. Merit rating with rater reviewing his ratings with employees		X	
6. Job evaluation		X	
7. Participation in "juniors boards," committees, work simplification, job evaluation, employee group activities, public relations, etc.			X
8. Aptitude tests for selection	X		
9. A "search-for-talent" among present employees	X		
10. Nominations for talent, by fellow employees	X		
11. A talent file indexing abilities and interests of those included	X		
12. Policy and practice of internal promotion wherever possible	X		
13. Posting of vacancies	X		
14. Survey of employee attitudes			X
15. Periodic interviewing of employees, or questionnaire to elicit new data, desires, suggestions, etc.	X		
16. Employee mention, and pictures in the employee paper	X		

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Employee Suggestions: One Key To A Company's Success

by W. G. Waggoner
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Management men interested in the broad view, easily forget that a small basic operation can lie at the bottom of a great success or a great saving. This article tells of one purely American idea that often develops a business enormously. The author tells how his government office has saved dollars through its workmen's suggestions. The idea applies to every business and industry.

EVERYONE in the Army from the top kick to the five star general knows that for every offense there is a defense. Every boxer knows that for every blow there is a counter blow. Every wrestler, that for every arm buster there is a counter leg buster. Big business has learned that employee suggestions are the antidote for bigness in business.

The unfortunate result of bigness in business or government is a tendency toward loss of individuality; the tendency to analyze, weigh, measure, classify, and put a price tag on the individual. One of the latest fantasies of the efficiency gobble-de-gookers is a little sketch entitled "The Frequency Method of Functional Time Reporting," which translated means: "when the gong strikes start spying on yourself and report to me." A famous scientist had considerable success driving rats to distraction with crossed signals.

All of these things are perpetrated in the name of efficiency and economy. Any individual, particularly the freedom-loving, independent American bitterly resents having his personal dignity assaulted from every direction. It could be immediate efficiency; but piled higher and deeper it could be national suicide. We did not get on top of the heap as a goose-stepping regulated mass, but rather as an imaginative resourceful group of individuals, headed, not herded, in the same direction.

The employee suggestion plan is the counter blow of an inherent dislike of restraint or regimentation. Suggestions have shown an ever-increasing popularity since the beginning of World War II. They have proven their worth to employers when the chips were down with labor and material shortages staring a triple-A priority contract in the face.

We all like to see our ideas at work, producing more things, easier. Suggestions offer the employee an opportunity to strike back for his recognition as an individual. They offer the same safety valve to bigness in business as the henpecked husband's night off with the boys.

Suggestions have reached voting age. The National Association of Suggestion's Systems (with headquarters in Chicago) came into straggling existence in 1942. Their membership roster today is a Who's Who in Industrial America. The sole excuse for the existence of this organization is to find ways and means of encouraging individual participation in a group effort. Private industry was not only quick to recognize the dollar sign in front of employee ideas but has wisely recognized the effect in tuning up employee morale, hence production. It all makes sense, dollar sense.

Suggestions are teaching the problems of capital, and allow management a close-up at what motivates the individual worker. The very act of originating a suggestion automatically translates the profit point of view to the employee. It gives him a bird's eye view of what goes on, on the other side of the fence. The act of appraising the suggestion brings management and labor together in a harmonious setting that can be accomplished by no other means. Company picnics, service badges, insurance plans, housing and other recognized employment inducements are all right, but they are accepted by the employee with tongue in cheek; they carry the flavor of bargaining for more employee energy. Not so suggestions. They may have had their inception as a tool of management but the synonymic relationship between tool and use has disappeared. Nobody is using anybody. Management needs the ideas of employees and is more than willing to pay for them. It is as simple as that.

It is entirely possible for one good employee suggestion to result in financial independence for the suggestor. The most advanced plans in private industry place no limit on the amount of an award. It depends entirely upon how much money it makes for the company and the profits are cut on an equitable basis. Returns from good suggestions may come in year after year, as regularly and in the same coin as dividends and employees are more than glad to lay it on the line.

In some respects an employee of a big company has a better chance to put his ideas across than he does as a lone-wolf inventor. His ideas are more likely to be practical, distilled through experience. The president of a large corporation knows he is more likely to get a good idea from an employee who has daily contact with his problems than from a free-lance outsider. And, the suggestor not only get a quick hearing, but he has the resources, equipment and know-how of his company to test his idea and put it into operation.

Our federal government has been slow in following the lead of private industry with employee suggestions. It is only within the past few years that through Public Law 600 Congress authorized the Federal Government Suggestion Program. The rules are pretty rigid. The lid is $1,000 for a suggestion. The total may not be over $25,000 for an agency. The evaluation is restricted to savings in the first year of adoption of the suggestion and permits only a maximum of 5% of the savings for a cash award. Even so, the program has proven to be a good investment.

In California, for instance, the employees of the United States Bureau of Reclamation are particularly suggestion minded. It might be argued with some logic that the nature of their work in building huge dams, powerhouses and irrigation systems offers more suggestions opportunities than most government operations. However that may be, these employees have turned in suggestions so good they have resulted in patent applications.

One employee whose job was planting acorns on the rocky slopes about Shasta Dam to prevent soil erosion was having a rough time digging in the earth between rocks with a pick and shovel. Even when he was able to plant the acorns the disturbed earth left an invitation to rodents that a bit of digging would uncover a nice meal. This employee designed a special planting tool; a sharp pointed device with a stirrup for foot power application and his problem was solved.

Another employee invented an automatic gate control device for the 140 mile Friant Kern Canal that automatically raises and lowers check gates so that the water released from Friant Dam levels out smoothly through the entire length of the canal. This saved the yearly salaries of a number of gatetenders.

Another employee devised a metal coffer dam. His job was to repair breaks and outlet works in the Contra Costa Canal. This canal must be kept full of water. It was the usual practice to sandbag and caulk an area around a break in order to make a repair. This employee devised a metal suction cup that the pressure of the water held in place against the side of the canal. Then the water could be pumped out and the workmen climb down inside below the water level and make the repair. The whole coffer dam could be transported to the site of the repair in a jeep and lowered into place by a jeep winch.

This same employee designed a water propelled canal scraper that floats down the canal and scrubs it clean.

Some suggestions are the result of group effort, like the radio recording rain gages located atop the mountains at headwaters of streams emptying into the Sacramento River below Shasta Dam. Whenever a flash flood occurs on one of these streams the robot goes into action and radios Shasta Dam exactly how many acre feet of water is coming and the gates at Shasta Dam are adjusted accordingly. This device prevents flood damage to rich areas along the Sacramento River. A whole group of employees cooperated on this suggestion.

These are some of the bigger ideas from the California Bureau of Reclamation employees. There were 40 more good ones for one year alone. Yet the total cost to the Government was $905.00. Anyone of the ideas mentioned saves the Government thousands of dollars in the first year of operation, and they will be used year after year.

Suggestions in both government and private industry have had their share of growing pains. They were viewed with suspicion by management and employee alike. One of the most difficult things to do is to define a suggestion. The word itself invites misconception from some employees. They take it too lightly. This type of employee may suggest that a way be found to fly to the moon, without giving any specific details. On the other hand you have the employee who thinks a good suggestion must approximate the atom bomb. Somewhere in between these two extremes lies the field for a good suggestion. Then, there is the supervisor who regards a suggestion by an employee under his supervision as a personal affront to his own efficiency.

And every suggestion official is familiar with the fellow who fixes you with a gimlet eye and flaunts the brilliantly incisive question: "Where are all the savings that are being made by suggestions? Looks to me like there are just as many people on the payroll as ever."

Let's see what makes this fellow tick. His attitude would thoroughly applaud a store owner who started with 9 employees and had four excellent suggestions which enabled him to operate his store with only five employees. But suppose instead of laying off employees the owner through these good suggestions decided he could run two stores—then two hundred. You hear by the grapevine that this kind of thinking accounts for the huge chains with hundreds of stores and thousands of employees. Looking at it another way, this same type of employee would expect an effective United States of America Suggestion Program to enable us to become so efficient we could all move into one state and give the rest back to the original owners. END

Oaks from Small Acorns

One new idea inherited by America from England was a way to use fire by means of an internal combustion engine. This gave birth to our automotive industry, without which America's standard of living would be far lower. For it, alone, gives gainful occupation to over 7,000,000 of us. Farming employs only 9,875,000, including farm families as well as hired hands. Yet agricultural ideas have made far richer the rich soil of our country. When America was young, it took 19 farmers to feed one city dweller. Today 19 farmers produce enough food for themselves and for 66 others. This was the creative genius the McCormicks and Deeres poured into farm machinery . . . from "Applied Imagination," pp 2, 3, by Alex F. Osborn, Ph.M.

HAROLD F. SMIDDY, Vice President of General Electric and head of that firm's Management Consultation Services Division, is a former Vice President in charge of Research and Development of SAM. Mr. Smiddy's 34-year business career has included partnership in the well-known management consulting firm of Booz, Allen, Hamilton, and executive service with Electric Bond and Share Company, West Penn Power Company, Ebasco Services, Inc., as well as membership in many leading professional organizations.

The Importance of Research To Industrial Engineering

by Harold F. Smiddy
Vice President
General Electric Company

The fields of research and industrial engineering, this author reminds us, are two inseparable elements of a "closed loop" system of commercial progress; their nourishment of each other's development demonstrates again the dynamic interaction of the various branches of modern industrial enterprise, and points up the clear need for close and continuing contact between these vital constituents of business.

PROGRESS IN the field of management, even in management techniques, comes from research, just as it does in chemistry, electronics, medicine or other professional fields of knowledge.

Here are the basic points:

"First; advancing science and technology comprise one of the major factors fixing the nature of our Society and the problems of organizing and managing its constituent institutions today.

"Second; the impact of such scientific and engineering developments, and of the power over materials and equipment which they bring, requires corresponding creative thought and effort to keep social progress and human relations abreast of technical progress.

"Third; the necessity to organize and to manage the business and other basic institutions of our increasingly mechanized civilization competently, calls peculiarly for the kind of skills our engineers—and specifically our industrial engineers—possess."

It seems to me that these same three points afford a solid foundation, especially the first, namely, that science and technology represent dominant forces founding and shaping today's Industrial Society. As Col. Lyndall Urwick, CIOS Gold Medalist at the Ninth International Management Congress, cogently put it in his powerful Calvin Rice Memorial Lecture at the Chicago Centennial of Engineering:

"In little more than 250 years, the scientific curiosity released by the Renaissance has resulted in a major cultural revolution. Man has acquired a control over his material environment quite unprecedented in the history of the human race . . .

"Why then with this tremendous power in our hands, with so much that is hopeful just over the horizon, should we be rent with factions, afraid, as many are afraid, of the very future of humanity as a species?

"For a very simple reason. This newfangled power over material things, these gifts which engineering above every other profession has placed within our reach, are not unconditional. The price of power is understanding, the insight to use it right. As every engineer knows, a culture dependent on power-driven machinery has its own postulates. Above all, the proper, the effective use of modern machinery demands of men an intricacy of cooperation, a refinement of social discipline, such as they have never before contemplated. All around us is the evidence of this truth."

This then is the environment in which industrial Engineers, in particular, must function.

In a volume called "Adventures into the Unknown—The First Fifty Years of The General Electric Research Laboratory," Lawrence A. Hawkins, long the beloved Executive Engineer of that famous organization, gave these penetrating definitions:

"Engineering is applied science. Scientific knowledge is the most important raw material for engineering development—and the source of scientific knowledge is *research*."

My first point as to why research is of importance to industrial engineering is this simple fact: it is the very root and source of the industrial Engineer's raw material, the basic knowledge on which his whole profession and job is built.

There is, however, an even more urgent reason why research is of such importance to industrial engineers. This second reason rises from this condition: unless you continue to develop ways and means of increasing our nation's industrial productivity, and at even faster rates than heretofore, both our living standards and probably our national se-

curity itself will be adversely affected.

This is no mere idle surmise but rather represents a premise which has already been thoughtfully and quantitatively supported in the significant April 1952 issue of FACTORY MANAGEMENT AND MAINTENANCE. The exposition there is worth your time to read in full. Oversimply it may be briefed here in the following six points:

Six Major Points Summarize Article

1. To increase our standard of living for the period 1950 to 1960 at the same rate that we did from 1940 to 1950, there will have to be an increase in the purchase of goods, services and houses equivalent to $505 per person annually by 1960. If we must continue even present levels of government services and national defense, we will spend $93 more per person in 1960 than in 1950, or $598 total. And for "surplus" or capital savings to create needed plants, we will require another $89 per person by 1960, or $687 per person annually of national production by that time.

2. However, for these same years, while population is increasing at an accelerated rate (18.7 per cent for 1940 to 1950, but an estimated 24.3 per cent from 1950 to 1960) the actual civilian worker content is increasing at a slower rate (12.9 per cent for 1940 to 1950, 6.0 per cent for 1950 to 1960).

3. The result of these two fundamental trends is a compounding effect on the productivity of available workers. We will not only desire more materials, things, and services for each person, but also for a larger group of people with a smaller percentage of effective workers to accomplish the task.

4. In 1940, production per worker was $4150, by 1950 it was $5100 or a $950 increase; but for 1960 we would need, on the above trend basis, $7210 per worker, or a $2110 increase.

5. The net of it all is that we will need a 42 per cent increase in productivity by 1960, and the hard reality is that this basic requirement is just about double the rate of increase now being obtained by current methods. This critical condition is even more serious because the actual increase in productivity improvement will have to be even greater in the manufacturing industries, since the opportunities for increasing productivity in the service and distribution industries always seems to lag those in manufacturing historically. probably due to the inherently dispersed and so-hard-to-change characteristics of such distribution and services work.

6. We must find a substitute for workers to fill the gap between increasing total population and a relatively smaller civilian labor force in that population, even to maintain what appears to be our traditional rate of increase in productivity when measured in consumable dollars per person, let alone to increase it is such proportions as those clearly demanded of all of us.

Faced with this challenge, the need of industrial engineers for new knowledge, in dimensions available only from the field of research, is crystal clear. Let us not belabor the importance of such research further. Rather let us now look at the nature of the approach so clearly called for.

Mogenson's Idea of Work Simplification

Allen Mogenson once said, "Work Simplification is a field, a way of thinking, a philosophy—not a packaged scheme. . . . It is the organized use of common sense to find better and easier ways of doing work." That is still good counsel and it still points to the only known and paved route to the goal of greater productivity in the true sense; that is, an increase of output by better management and design, not by mere increased intensity of applied human effort and muscle power.

The techniques used today are, of course, widely accepted, even on the international scene. Yet it is barely over a half century since Taylor was giving his classic testimony and even less since the Gilbreths and other contemporaries, here and abroad, were embarking on their search for "the one best way." It is even fewer years ago when pioneer practitioners in industry generally took up that search in daily manufacturing activities. One of General Electric's training manuals for manufacturing managers points out that "in the late twenties many investigations similar to the Gilbreth basic motion studies were made on various assembly lines and in machine shops of the several departments of the company. Time values for basic movements were thus established and proved reasonable by trials conducted in the West Lynn, Schenectady, Fort Wayne, Elmira, Bridgeport and other plants."

When you think how far it is from those so-recent yet so elementary efforts, to the kind of activities which technical speakers are discussing, one can only feel confidence that continuation of such earnest, gritty, down-to-facts struggles will continue to develop the greater progress still demanded by the challenge of the coming decade.

A review of the book on Methods-Time Measurement, by Maynard, Stegemerten and Schwab, which appeared in AMA's MANAGEMENT REVIEW noted that basically Methods-Time Measurement is a tool of methods analysis that gives answers in terms of time without the necessity of making stop watch studies, which not only covers methods improvement but also permits setting fair and consistent time standards. That review then went on to make the penetrating further comment that the solution to the problem of establishing accurate standards seems to be in "doing a much more thorough methods job than has heretofore been done throughout industry."

Since Methods Engineering is itself but a reflection of man's perpetual search for "better and easier ways of performing the work that is necessary to support life and to increase material well-being," I think the use of the phrase "doing a much more thorough methods job" is really a key to our topic; that is, to "The Importance of Research in Industrial Engineering."

The Characteristics of Scientific Research

To drive home the point, let me go back to Larry Hawkins' book which I mentioned a few moments ago. In it, he goes into the identifying characteristics of "scientific research" and makes the provocative statement that:

"The basis of the scientific process is the reproducible experiment, and even logic (the science of correct reasoning) is secondary in importance, in scientific research, to reproducible experiments."

Then, going on to talk of Dr. Coolidge, one of the greatest scientists of his day, Hawkins notes that:

"Always thorough himself, Coolidge is utterly impatient of carelessness or superficiality. An experiment so performed that any essential element is left in the slightest degree uncertain disgusts him. Conditions must be so rigorous that complete confidence may be placed in the results. If the desired facts are to be obtained not by experiment, but through communication, his informant must not only know those facts, but must know *how* he knows them."

The kinship of research and industrial engineering, and especially of industrial engineering of the advanced kind, has been clearly established in the simple requirement of being more thorough as the road to success, and as the common or family tie, in both.

Painstaking Approach Results in Best Work

It is exactly through this painstaking approach that the best work can be done both in the day-to-day practice of industrial engineering and also in continuing the research way of life which has already brought you so far since those first groping steps in the twenties and thirties, indeed, even in the forties.

Yet, we must cast a word of warning, and a plea that the sights be kept high! A leader has no place to go but down, unless he unflaggingly persists in bearing down to keep his leadership.

The warning itself is simply this: in the success you have already achieved, you have also the seeds of retrogression. The facts of life are that even in this new field of methods-time measurement, there is no longer a dearth but really an almost indigestible mass of detailed data, of case histories, of examples and figures, in which if you are not most tough-minded, you can easily find yourself engulfed, thrashing around in oceans of minutiae in an effort to keep afloat among them, let alone to swim on to new principles and fundamental advances. I know it is awareness of this very real hazard that should make us back away from the technical topics and try to get a glimpse of the broader aspects behind them.

To make the example a bit less personal, let me pass for a moment to an identical condition in a rather closely parallel field, that of the even newer science of Operations Research. Dr. Arthur Brown, formerly of the Arthur D. Little organization and now with our own Company, has said:

"The application of the scientific method to the study of the environment and operations of an organization and to the determination of the basic laws of operations in order to improve the effectiveness and efficiency of the organization in carrying out its basic purposes."

This goal, as you so well know, differs in no ultimate respect from that of your own work in the area of basic motion timestudy. Yet in the field of Operations Research, we already see the same paradox of hope and of danger which you too are up against.

On the one hand, Operations Research through intensive study of existing industrial operations and of data constantly generated in connection with them holds promise of great progress in easing management pressures in such areas as improving competitive position, minimizing required investments for a given output, stabilizing employment to a new degree, and increasing profits and leadership.

Yet, while looking clearly at possible gains of such tremendous significance to customers, investors and employees alike, it is only too sad that the great majority of the current literature (and talk) in this field of Operations Research and its application to management problems is compounded of so much abstract mathematics and scientific jargon, and that the basic ideas are difficult to perceive, particularly by practical managers preoccupied with diverse and crushing problems of day-to-day operations. The literature is also pointed predominantly toward the solution of specific problems, so that extremely broad reading is required even to arrive at a well-organized general concept of what is being described.

What is required from an immediate and practical standpoint, therefore, is specific study, assimilation and subsequent dissemination of such information; and in organized parcels that can be understood and be of early use to practical Operating Managers who can be helped by understanding and applying it well to the activities for which they are responsible.

Discovery Breeds Further Discovery

As Dr. Willis R. Whitney once said: "Discoveries and inventions are not terminals, they are fresh starting points from which one can climb to new knowledge."

That too, is a great opportunity! All this new knowledge which the field is developing, and is telling each other about, can, of course, be an "end" in which you can wallow, even in which you can find new routes to profitable client business by applying it to more of the clients' problems. But if you settle for this, the chance that we will attain the increasing rate of productivity which analysis shows is so vital for adequate national progress from now to 1960, is bleak indeed.

Yet there is no better insurance that such fears are needless, than the simple reality that international engineering groups gather periodically for methods-time measurement conferences.

This is good indeed. It brings out another point made by Dr. Whitney. When writing of the famous Nobel Prize-winning research scientist Irving Langmuir, he said:

"His methods develop principles of *new* utilities, instead of putting patches on the old. By taking interest in *primary* causes, he discovers the basis on which absolutely *new* things may be found."

This, of course, is the true mark of the great scientist, of the research worker who leads us into new areas of that scientific knowledge which is the raw material of all engineering effort.

Science Is More Than Collected Facts

The right goal was clearly laid down in a penetrating treatise, *The Arts and the Sciences*, by R. E. Gibson of Johns Hopkins University in the AMERICAN SCIENTIST for July, 1953, when he wrote:

"Science is not the mere collection of facts, which are infinitely numerous and mostly uninteresting, but the attempt by the human mind to order these facts into satisfying patterns. Now a pattern or design is not a purely objective function, but something imposed by the mind on what is presented to it—as is seen in those pictured piled cubes which can be made at will to appear in advancing or receding order."

The same truth was similarly emphasized by Dr. Norbert Wiener of the Massachusetts Institute of Technology in his profound book *The Human Use of Human Beings* when he said:

"One of the most interesting aspects of the world is that it may be considered to be made up of patterns. A pattern is essentially an arrangement. It is characterized by the order of the elements of which it is made, rather than by the intrinsic nature of those elements."

He goes on to point out that a pattern can be used to convey information, and will usually convey more information than the statement of isolated facts, since it also conveys inter-relations.

Here then, is the fundamental importance of research in industrial engineering. In the kind of awe-inspiring cultural revolution and complex Industrial Society which Col. Urwick so graphically pictured, the need to "Think

How do they feel . . .?

What are the positions of management and labor regarding Time and Motion Study when they meet at the negotiation table?

Read . . .

TIME AND MOTION STUDY IN COLLECTIVE AGREEMENTS

by George Jay Anyon, Ph.D.

A management professor at the world-famous Wharton School of Finance and Commerce analyzes the positions of management and labor in bargaining agreements from 1946 to the present, with regard to the increasingly important contributions to industry of Time and Motion Study.

A RESEARCH PUBLICATION OF THE SOCIETY FOR ADVANCEMENT OF MANAGEMENT, INC.

Through," to follow the true "Research Approach" is urgent beyond any question of dispute.

As Dr. Zay Jeffries put it in a meeting with some of the Faculty at the Case Institute of Technology in Cleveland:

"It is obvious to all that life is becoming more and more complex as our industrial civilization advances. Evidences of this complexity can be seen on all sides. The sum total of knowledge is increasing at a very great rate. Each subject has its new frontiers and the general acquaintance with one frontier merely serves as an incentive to establish new frontiers. . . .

"At the same time human beings are changing very little. There is no positive evidence that the more able men today excel yesterday's able men.

"The whole situation would, therefore, get out of hand and become unmanageable if it were not for the fact that concurrently with the increase in complexity, there is also constant progress toward simplification. For example, although the means of transportation are becoming more complex, transportation itself is becoming more simple. . . . The same may be said of communication. The means of communication have become more complex but communication itself has become simplified. The same is true also of many of the ordinary things of life.

"Also, there is continuous simplification in connection with our knowledge. At one stage a great mass of facts is accumulated, and at a later stage, a generality is developed by some individual or group which brings this great mass of facts under one or a few simple rules. Multiplication as a short-cut to addition is one of the great examples of such simplification. Also, each obscure fact that is explained in, say, terms of other known things is a simplification. Standardization is one of the most important simplifying activities.

"The consequence of the above is that our progress depends to a considerable extent on seeing to it that the simplification processes move forward in approximate balance with the complicating processes. If this can be achieved, then individuals with a given ability can expect to go forward indefinitely without becoming casualties of their own complexities."

The essence of industrial engineering is, by definition, a search for work simplification. As veterans in the art of thinking through in this field, I can safely say that industrial engineers are in fact more researchers than engineers at heart.

In conclusion let me re-affirm that, having thus painted the nature and need of the research approach which is so clearly called for to meet today's managerial challenge, it is a matter of obvious logic to expect that industrial engineers, in the best sense, must be among the pioneers in successfully surmounting that challenge.

It is men who know how to think through who are sure to find the ways to extend the power of practical managers so that they can achieve the necessary increased scope for their managerial planning and decisions.

Fundamentally, it is a question of discovering patterns in an operation, often where they were not known to exist before. To do this, one needs to see the operation as a whole, with a clear understanding of each function, both separately and in relation to the whole. In many cases, this can be done simply by looking at the business on a month-to-month or year-to-year basis instead of only day-by-day or order-by-order. It is then you will often find yourself provided with patterns and measurements which can serve as a basis for decisions that formerly had to be made by hunch.

As decisions thus founded on measurement, rather than on hunch, become more common, we can move forward—from work simplification and methods-time measurement to Operations Research, to the organized search for patterns of simplicity which can be beacon lights through the fog of complexities that now so often impede our progress.

The remaining steps to conception of order out of apparent random chaos, to patterns in such order which permit more output with less effort and cost and which lead to mechanization and automation, follow logically.

The tremendous increases in productivity needed alike to keep our living standards going ahead, and to conserve our National Defense and safety, are clearly attainable as the results of this think through, or research, way of life.

Call it research or call it industrial engineering as you prefer. Where the one stops and the other starts is itself a matter of personal viewpoint, varying as widely as the persons who study the subject. Actually, both are but parts of a closed loop in which each feeds back to, and constantly re-directs and re-energizes, the other.

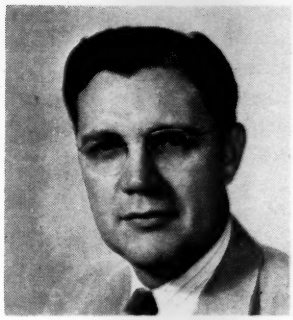
Gibson, in commenting on the benefits which flow from the alert mind and the fertile and disciplined imagination which are absolutely indispensable to the scientist whose work is to rise above mediocrity, points to the net result:

"Ideas culled from one set of experiences may be digested by the mind, transformed and applied with good results and every appearance of originality to problems presented by another set of experiences."

As either contributor to, or as beneficiary of research, the industrial engineer is enriched as research is fostered, stimulated, advanced and used to provide that flow of scientific knowledge which is indeed the most important raw material for engineering development.

The "importance" of research to the industrial engineer in such a challenging climate seems both self-evident and self-attractive for each and every one of us, and for all of our associates in the fields of either engineering or management in this amazing industrial society which it is our privilege and our pleasure alike to help to guide forward. END

JOSEPH W. TOWLE began his industrial career as trainee supervisor for Montgomery Ward & Co. in 1933. He has served since then as personnel manager for Chicago's Bodine Electric Co., and on the staff of Booz, Allen & Hamilton (management consultants). With W. R. Spreigel, he is co-author of Retail Personnel Management, *published by McGraw-Hill in 1951, as well as several articles for Advanced Management magazine. Mr. Towle is a member of SAM, (President, Chicago Chapter, 1953-54), AMA, as well as of other industrial and management groups.*



Educational Programs And Executive Development

by Joseph W. Towle
Professor, Industrial Management
Northwestern University

Are our colleges and universities doing a creditable job of furnishing industry with tomorrow's management leaders? This question of prime importance to our business economy is answered in the affirmative by this author, as he describes several existing programs and their objectives. His article is a reassuring glimpse into the future of American commercial leadership.

JOHN RUSKIN said, "Education does not mean teaching people what they do not know. It means teaching them to behave as they do not behave . . ." This concept applies to training for business management as well as to other educational areas. Changes which are required in the behavior of executives as they accept new or broader responsibilities, begin with changes in point of view. In our dynamic and expanding economy, executives and managers constantly make greater demands on themselves even when their levels and areas of operation remain the same. These necessary changes in thinking, which result in changes in behavior, are difficult to obtain when our business economy requires individuals to spend years of service in clearly defined areas of business specialization.

On the basis of sponsorship these educational programs for management can be classified into several types. Our university schools of business and some of the colleges are conducting educational programs for businessmen. The Advanced Management Program at Harvard, Northwestern University's Institute for Management and programs at Columbia, Stanford and other institutions are in this category. Some of the evening study programs at schools like New York University and Northwestern provide graduate or advanced management work. Chicago University's Executive Program, an evening study course, is especially designed for experienced management people. Most of these special executive courses attract middle and top-management people to the college campus from the large and medium-sized corporations. A minority of the college or university sponsored programs are designed to include supervisory or lowel-level management personnel. In a second category of executive training programs are those sponsored by associations, societies or affiliated groups of companies or industries. One of the largest of these programs appears to be the American Management Association's continuous "program of education by management for management." In three years more than 8,000 executives have participated in their workshop and orientation seminars. The decentralized activities in more than fifty cities of the various chapters of the Society for the Advancement of Management also constitute a tremendous executive development program. With a minimum of centralized control the conferences, seminars and discussion groups conducted by these SAM chapters are doing substantial educational work. Trade associations and other organizations provide similar training.

A third and probably the most effective type of business management training includes all of those educational and development programs conducted by business firms for their own executives or potential executives. The time, money and effort expended by some corporations in management training programs is amazing to some professional educators. It is more amazing, however, to see that a great number of profit-making corporations are still doing comparatively nothing to provide a continuous supply of executive talent in their organizations. A fourth kind of management training is the educational work, frequently of a personal coaching and counseling nature, which is conducted by the professional management consultants for their clients. These service organizations are frequently employed to install systems, procedures and programs, but find that many of their assignments are of an educational nature.

Combinations of these types of programs are also common. Some of the most successful management education

has been sponsored by companies or associations in collaboration with universities or colleges. Cooperation of this kind is most gratifying. No doubt it will lead to a clarification of the opportunities and responsibilities for both business leaders and educators in the field of management development.

The similarity of objectives and the common characteristics of management courses are worth noting. The adaptability of the same management tools and skills to business, to institutional, and even to governmental organizations, is illustrated by briefly referring to four of these programs with which I am familiar.

Harvester Course Stresses Personal Development

The Works Foreman Training Program of the International Harvester Central School has been called more appropriately the Works Management Training Course since it has been offered to general foremen, superintendents, industrial engineers, production control managers and all management people in the company's manufacturing plants. As a centralized training program it was designed to supplement the regular supervisory and other training courses offered locally at the works. It provided an intensive two weeks of study for foremen and managers in groups of 40 or 50, one or more coming from each of the company's manufacturing organizations. In this program emphasis was placed on personal development and human relations with some training in economics and company operations.

Since this Central School could accommodate only fifty or so men at a time, it required almost six years for the company to provide this management training for all those who needed it. During these years research and analysis constantly evaluated and improved the program. In June of 1953 the last selected group completed the course and company attention was turned to a "refresher" or advanced course to be offered at a later date. It was the writer's privilege over a period of five years to discuss the topic, "Industrial Organization and Control" with almost 5,000 foremen, superintendents and staff men who went through this educational program.

Industrial Management Institute Lake Forest College. In cooperation with the faculty of Lake Forest College, seven companies—Abbott Laboratories, Johns-Manville Products Corporation (Waukegan), Fansteel Metallurgical Corporation, Johnson Motors, United States Envelope Company, Franch G. Hough Company, and Jewel Food Stores—operate an Institute for the training and development of their middle management and supervisory personnel. At the expense of the corporations, the facilities of the College as well as the faculty have been used to provide a four-year evening school program called "The Essentials of Management". While the approach is somewhat academic, the program has been adapted to the needs of the executives and supervisors in these large and medium-sized companies.

Participants in this program attend college one night each week during the fall, winter and spring months for four years. At the end of this period they have studied rather intensively eight different subjects and they graduate from the Institute with appropriate recognition. This program is voluntary for those who are invited to participate.

In conducting the course entitled "Managerial Relationships" for this Institute we adopted a modified case study program using the Glover and Hower book of Harvard cases, THE ADMINISTRATOR. This course is offered in the first semester of the fourth year at a time when the participants have all completed courses in economics, industrial psychology, and other subjects. Coming from different manufacturing organizations but with similar preliminary training, these men constitute an ideal group to discuss realistic business situations found in the popular Harvard cases.

Model Course Given At Northwestern University

The National Institute for Chamber of Commerce and Trade Organization Executives. This Institute is an executive training program for Chamber of Commerce and Trade Association people which has been conducted each summer on the campus at Northwestern University for thirty years. Chamber members and Trade Association people come from all over the United States for a week's intensive study on the campus. The Institute's regular program consists of a week's study each summer for four years, and management training in all phases of organization work is provided. Those who are familiar with it know that the Institute has become a recognized management training program in its field. For several years regional institutes have been held in other parts of the country patterned after Northwestern's.

During the last few years a graduate seminar program has been conducted for the chamber and trade organization executives. This newer venture provides a refresher course for those who have completed the regular Institute program. Designed for more experienced managers, the seminar program provides discussions on such subjects as Economics, Human Relations, Organization and Management, Political Science, and special studies of organization problems. The seminars are conducted on a conference basis and the interest in this advanced work has been increasing each year. Even in this specialized field the need for organized training in administration and management is being recognized and programs are constantly being developed, revised and improved.

State Chief Examiners Are Trained in Management

Chief Examiners and Supervisory Officers Training Programs Traffic Institute, Northwestern University. The director of the Northwestern University Traffic Institute has reported that an increasing amount of the time of the Institute staff is being spent on training programs in the fields of administration and management. The program for Chief Examiners of state drivers' license bureaus consists of a three-week intensive study course each year for four years. These chief examiners are responsible for the supervision of all state officials who conduct the examinations for drivers' licenses. The most recent three-week training session was attended by the chief examiners from the state governments of twenty-six states.

The total program for these executives is divided into four sections with one portion presented each year. An executive may complete any one section at any time that it is offered. The first three-week session is concerned primarily with the technical aspects of chief examiners' work; the second section of the course is concerned with organization and administration of the chief examiners' work. The final sessions cover the selection, training and supervision of employees in these state organizations.

A clarification of the objectives of a training program can reveal the possibilities of profitably using university

people, associations, or consultants. When an analysis of the aims of the program is compared with the inventory of the services available within the organization, the need for seeking outside training talent becomes apparent. It is my opinion that most management education programs attempt to accomplish the following things:

What Management Education Programs Must Provide

1. *Growth and development of the individual* is expected when a business executive is selected for participation in a training program. The general purpose is the education of the so-called "whole man"—to broaden his vision, to teach him to think objectively, to analyze problems clearly, to determine courses of action soundly and to influence others fairly. Courses in speech, writing, ethics, logical thinking, semantics, self-expression, case discussions and similar subjects are offered to make managers better men and women.

2. As a part of his individual development most programs endeavor to improve the executive's *understanding of economic and governmental forces.* Courses in this area range from academic approaches to economics, law, the corporation, etc., to simple discussions of "how our business system operates", "our standard of living", and "free enterprise and competition". One of these courses considered to be quite successful was simply called "the isms" and quite logically presented the social and political advantages of capitalism.

3. An increased *understanding of the principles of administration, management and organization* is desired when executives are offered courses entitled, "Administrative Functions", "Industrial Organization and Control", etc. In some instances the training in these areas is left to case discussions but most programs still endeavor to formulate principles or generalizations which are considered to be a part of this nebulous thing called "managerial skills". Whether it is accomplished by the statement of principles or entirely by the use of examples, the objective is to improve the executives' ability to plan, to organize, to direct and to control operations.

4. A better *understanding of the organization and operations of his own company or enterprise* is an aim for the participants in management education programs. Obviously, courses specifically designed to accomplish this can be taught best by the organization's own personnel. In many businesses this goal is achieved through the presentation by company executives of formal or informal discussions of their own responsibilities. Among the most valuable learning vehicles in this area are the free and informal discussions which develop from merely meeting together.

5. An important purpose of most management training is to give the executive a fuller and more complete *understanding of human relations.* Today, the term *human relations* means many different things to different people, and most people sincerely believe that they are experts on the subject. Ruskin's quotation probably applies more to this phase of management work than to any other. Education, here, means teaching executives to behave as they do not behave when influenced by their emotions, their frustrations and their selfish motivations. It means teaching them to understand and to consider the emotions and sentiments of their subordinates. In attempting to achieve this goal, courses in psychology, sociology, business relations, human behavior, case discussions, and other subjects are offered. Moving pictures, slide films, charts, slap-boards, role-playing, playlets, case studies and other techniques are all used to sell the need for the understanding of people in order to work better with them. Through the study of human relations the executive is expected to understand better his own situation in the organization around him. This understanding is supposed to keep him aware of the inter-personal relationships existing between himself and his superiors, between himself and his subordinates, and between himself and his fellow executives on the same organizational level. It is also the hope of the sponsors of such programs that discussions of human behavior will reveal to each executive his own shortcomings and encourage him to behave as a normal and considerate human being.

What's Wrong With Present Development Programs

My experience with business management training programs prompts me to make some observations and comments. The implied criticisms do not apply to any one company or any one program.

From what is now considered to be "current practice" there will undoubtedly emerge a clear pattern of cooperation between business institutions and the universities and colleges in the area of advanced management training. More and more able men are moving from business into education and from the teaching field into business. Many of these men are working in the management development area most effectively.

Mr. A. D. Brush, of Abbott Laboratories, one of the original sponsors of the Industrial Management Institute at Lake Forest College, has pointed out that this program was unique because three original companies collaborated and sought the cooperation and the facilities of this local liberal arts college. This Institute is an example of the successful adaptation of college facilities and faculty talents to the needs of industry. The program also illustrates a new and growing area of service to the local business community which can be rendered by the colleges of arts and sciences through adult education for business.

Many Companies Need Outside Help

It is obvious that educators, associations and consultants can provide many services to industry in the management training field and these activities are of greatest value to those concerns which cannot duplicate them. The rapidly expanding organization and the medium-sized or small business might not be able to afford either the time or the money to provide for themselves the services obtainable on the outside. In addition to these situations, many companies both large and small, frequently seek counsel and guidance from outside specialists. As in any consulting situation, warnings should be given in regard to the use of outside specialists. The efforts of consultants are sometimes disappointing because of the lack of planning and the misunderstandings between the specialists and clients. These mistakes are not always the fault of the consultant, yet he usually receives the blame.

Some of the greatest benefits derived from management training programs are by-products and have no relation to the subject matter taught. The discussions among the participants before and after meetings, the bull-sessions in the evenings and at meals, the participation in group activities with other executives and the general experience of the programs probably bring on as much individual growth as the classroom work. And from a human relations standpoint, the realization by an executive that his boss, at considerable cost and trouble,

provided him with an elaborate educational experience does much to build confidence and morale.

Some companies send executives to educational programs to fill a quota, or to complete a class, or to support a school program. It may seem to be a good thing to do for many reasons. When the timing for a reluctant participant is wrong or when management is not really interested in what happens, the venture will probably not be too successful. The most promising programs in developing good management behavior are those in which top executives participate, show an interest in the men receiving the training, and follow-up the program with intelligent supplementary attention. Personal counseling, coaching and continuous development will greatly increase the benefits of most programs.

There is a tendency for management training programs to be divided into levels or zones. Supervisory or foremanship training is contrasted to top-management training. The first fault I find with this stratification is that middle management executives are frequently neglected. In too many instances foremen and supervisors are trained, top executives have conferences and go to Harvard or Northwestern, and the superintendents and general foremen who control operations become the forgotten men. This deficiency widens the gaps between the levels of management—and makes communications and coordination difficult. My second complaint with segregation in management training stems from the hundreds of comments from foremen and supervisors who in the midst of lively discussions have said "I sure wish my boss was here. That's a good idea and he never tried it in his life!" More use of "vertical grouping" of executives for management meetings instead of always using "horizontal grouping" (executives from one level in the organization) would improve the relationships in any concern with these problems. Having line and staff executives meet together is also helpful.

Lecture Can Be Effective Education Medium

Strong proponents of certain training methods and techniques are overly critical of procedures other than their own specialties. When explaining the case-discussion method of learning some enthusiasts speak of "the thin experience of a lecture". In my opinion, the experience of a lecture depends on who is lecturing. Certainly there are many able lecturers who go right on teaching successfully by the lecture method. On the other hand, some of the specialists in group dynamics who believe in "guided discussions" or "forced group decisions" disparage the "endless babbling and wandering" of the entirely free case discussion. In like manner, other training specialists favor films, charts, role-playing, buzz sessions, flannel-boards and other devices or techniques.

Case Method Technique Stimulates Interest

It seems to me that we should use every possible means of making our training work effective. Most training methods now in use have merit. Certainly the case method has proved that it can arouse and maintain the interest of experienced and high level executives as few other methods can. And there is evidence that guided group discussions as well as lectures are still effective in learning processes. Careful investigation of many successful training programs shows that teaching techniques and methods are frequently changed and varied for the betterment of those programs.

Sponsors of executive training programs are often asked how they evaluate the effectiveness of their programs. Apparently, there are no accurate measuring-sticks to determine the value of training. Information tests, attitude surveys, interviews, personnel statistics, and other techniques are used, but these procedures merely provide data with which managements can decide that the programs are desirable or not. Sometimes the evaluation methods degenerate into popularity contests for the instructors or for the subjects taught. Actually, management development programs reflect the attitudes and philosophies of the organization's top management. The programs are usually of more specific value to dynamic and expanding companies but they are almost always good for morale. They have many values which are hard to define. As a result, most evaluations still require the basic decision that management needs and wants these values or it doesn't want

It is characteristic of training programs that large numbers of executives are trained and some losses through turnover are expected. But, in some companies the lack of opportunities for executive trainees is beginning to endanger morale. An approach to this problem is to emphasize that the executive development program is intended to equip participants with skills and abilities to handle their present jobs more efficiently. Of course, training and development for promotion is necessary but some companies are at the stage where the development and promotion aspect should be de-emphasized and better management for present operations should be the aim.

Another threat to employee morale appears when a company management deplores the shortage of promotable men and at the same time overlooks the long-run potentialities of faithful employees who have insignificant shortcomings. If personnel counseling and management training are truly effective some large corporations could seek out more trainees from their own employee ranks and step them up to greater service. More personal coaching and upgrading of present employees and less executive recruiting is my sincere suggestion for many large concerns.

Those who develop management training programs for companies are frequently handicapped by the constant pressure to give the executives or supervisors a program they will enjoy. Some industrial trainers find that their jobs depend upon their ability to make a course interesting and entertaining. Certainly, salesmanship is important in any activity and successful training aids should be used, but great lessons are frequently learned from adversity and difficult tasks. Effective training programs should not attempt to avoid the laborious but essential processes.

Long-Range Training Programs Are Increasing

It is encouraging to note that many management training programs are expanding from short inspirational courses to long-range development programs. The education of business executives is now considered to be an essential and continuous activity in most progressive organizations. Some of these companies have placed the responsibility for executive development in the hands of high-ranking officials. The nature of their work requires that these business executives themselves become educators in a very real and practical sense. Colleges and universities are looking forward to a further integration of interests and a wider cooperation between educators in schools and in business. END

Chapter Notes . . .

Foremanship Is A Profession was the title of a fine professional piece of programming by the Fox Valley Chapter that has just come to hand. Speaker was Vincent J. Linn, Area Manager of National Association of Foremen.

Lately the Trenton, New Jersey Chapter toured the Delaware Valley's newest industrial plant, which belongs to U. S. Steel. The new plant, incidentally, is named for one of ADVANCED MANAGEMENT's authors, Benjamin Fairless (May, '54).

The Binghamton, New York Chapter joined the Chamber of Commerce of that city to hear the famed lecturer, educator and author Dr. Felix Wittmer talk on *The Socialist Threat to American Industry*.

One of the larger eastern print shops was toured by the Worcester, Massachusetts Chapter lately. The Syman-Gordon plant, which has just installed an eighteen-thousand-ton press.

The Western North Carolina Chapter is the home chapter of a distinguished award winner, Eugene Benge, recipient of this year's Industrial Incentives Award. The winning article appears in this issue (see Page 19).

An active investigation into the most modern of all big businesses was the plant tour of the Baltimore, Maryland, Chapter. They toured the Telephone Company Headquarters Building in that city, under the auspices of the Chesapeake and Potomac Telephone Company of Baltimore City, and the Maryland Chapter of the Telephone Pioneers of America.

The well - known editor - author - consultant Dr. Joseph Juran spoke to the Central New York Chapter in Syracuse, New York, at a joint meeting of the Chapter and the American Society for Quality Control. Dr. Juran's subject was *The Design and Construction of a Unified Quality Control Program*.

The Clearing Chapter of Illinois, at its Second Annual Foreman's Clinic, presented a complete coverage of one of management's most durable, always-important problems; *The Key to Lower Cost*. The Clinic handled this subject in a series of group discussions.

The Indianapolis Chapter, with Butler University, has instituted what should be a valuable Methods-Time Measurement Training Course. Cost is under $400 per person.

The Richmond, Virginia Chapter had as its speaker lately the Production Engineer of United Mills Corporation at Mt. Gilead, N.C., Mr. Robert Levin, who spoke to the Chapter on *Production Methods and Measurement*.

The Detroit Chapter's April bulletin announcing Bruce Payne, 1953 SAM President speaking on *Management in the Challenging Months Ahead*, was one of the handsomer production pieces seen this year.

The very active Kansas City Chapter has given to the Linda Hall and University of Kansas City libraries thirty technical books useful to students of both engineering and management.

Dr. Ernest Dale of the Graduate School of Business at New York University spoke recently to the Lancaster, Pennsylvania Chapter on *Strategic Factors of Good Business Organization*.

The Dallas Chapter lately heard Mr. G. Keith Funston, President of the New York Stock Exchange, whose subject was *Wanted--More Shareholders*.

(EDITOR'S NOTE: Send us your latest news; This column is your own; a warm, informal way of letting Chapters know just what each one is doing.)

JUNE CHAPTER ACTIVITIES

CHAPTER	SUBJECT	SPEAKER	TITLE	PLACE	DATE
Hartford	Annual Business Meeting			Nutmegger House, Newington Center, Conn.	10
Hudson Valley	Golf, Dinner and Social				
Kansas City	Annual Business Meeting and Social Program			Pine Room, Fred Harvey Restaurant, Union Depot	15
Madison	S.A.M.	George Estes	Executive Vice-President, S.A.M.		2
Milwaukee	Annual Fun Night			Blatz Brewing Co. Auditorium	10
New York	Ladies Night			Roosevelt Hotel	17
Philadelphia	Dinner-Dance			Lulu Country Club, North Hills, Pa.	5
Sacramento	Panel on Employee Benefits				1
St. Louis	The Necessity for Managements' Participation in Community Affairs				8
Twin City	Annual Business Meeting			Minnesota Union	10
Western N. C.	Annual Dinner Meeting and Ladies Night				16

CIPM Reports . . .

British Productivity Council Is Practical Management Aid

The British Productivity Council, which succeeded the United Kingdom Section of the Anglo-American Council on Productivity in November, 1952, has since then been engaged in formulating and putting into effect a practical program for assisting industry in Britain in its drive for higher productive efficiency.

The impetus for the drive is the urgent need for Britain to be able to provide other countries with goods and services at prices they can afford; and the success of the drive depends mainly on ensuring that the skill of every one of the 14 million men and women in British industry is used in the most effective way, to obtain the greatest possible return from materials, machines, and money. The task of the Council, therefore, is to focus attention on industrial practices (whether organizational, technical, or concerned with human factors) which have already proved their worth, and which it believes will bring valuable results in a comparatively short time if adopted on a wider scale.

The Council determined from the outset that much of its work should be carried out on local initative, guided and assisted by the central organization. Accordingly it promoted the formation of local productivity committees, consisting of employers and trade union officials, together with members of professional bodies and technical and educationl institutions. To date, no fewer than 80 committees have started work, and others are being formed.

The basic idea has been to mobilize, in the drive for higher productivity, the vast reservoir of local experience that undoubtedly exists throughout the country. The committees are broadly conceived and composed. They are a joint effort by all levels in industry, and their members are drawn from every branch of it—manufacturing, building, mining, agriculture, transport and distribution.

Since conditions vary in each area, the local committees are being encouraged to act very largely on their own initiative, and to draw upon their special knowledge of local needs, in preparing their plans of action. In the main, however, the types of activity which the Council has recommended they should undertake include: arranging inter-factory visits, lectures and discussions; film shows; exhibitions; encouraging the introduction of special courses on productivity subjects at schools and technical colleges; forming sub-groups to discuss such specialist matters as work simplification, costing methods, standardization; and encouraging the initiation of training schemes in local firms.

The Circuit Scheme of Exchange Visits between firms in different industries, based on visits by small teams drawn from management, technical and workshop levels, promises to be one of the most far-reaching of the committee's activities. The Council is convinced that there is much to be gained by such visits.

The idea of mutual help in industry is not, of course, new. Some United Kingdom firms have been sharing their knowledge and experience, especially in the technical field, for many years. What the Council wants to see, however, is a more widespread and continuous application of this principle. There is no suggestion that details of new processes or products should be freely disclosed to competitors during the visit. Plenty of scope exists for exchanges of experience on a variety of matters connected with the organization of production which are in no sense secret. In addition, there are many firms in the same industry, using very, very similar processes, which do not make the same end-products, and therefore are not competitors.

While, as has been emphasized, the success of each local committee will depend on local initiative and enthusiasm, the Council is nevertheless able to help considerably with advice and suggestions in various practical forms. It is, for example, providing lecturers to meet demands that cannot be satisfied locally, and a series of 60 pamphlets on technical subjects is being prepared for use as a basis of discussion at meetings.

In order to maintain contact with the committees, regional conferences are held from time to time. These are proving very valuable for suggesting new ideas and ascertaining the views of the committees on projects which might be sponsored by the Council.

Most of the committees are only now beginning to develop their programs, and it is therefore too early to attempt any detailed survey of their impact on industry. However, the rapid progress in their formation has shown that there is a hard core of enthusiasm in support for the drive for higher productivity. The task ahead is to spread this enthusiasm and harness it to a sustained national effort for greater efficiency. It is a long-term task in which everybody inside and outside industry has much at stake. While it would be unwise to expect spectacular results, there is already evidence that the efforts now being made are having a stimulating effect on industrial thought and action.

BY SIR THOMAS HUTTON
DIRECTOR, THE BRITISH PRODUCTIVITY COUNCIL

NOTE: In lieu of the CIPM report of Robert Gleason, Director of Research, CIPM, the editors present here an account of the work of the British Productivity Council's program of assistance to industry, written by the international management authority, Sir Thomas Hutton.

SAM Chapter Performance Awards Report

for period—July 1, 1953-March 31, 1954

CHAPTERS	TOTAL	CHAPTERS	TOTAL
Kansas City	16,148	Western Mass.	4,708
Worcester	15,838	Greenville	4,547
Lancaster	11,296	Knoxville	4,446
Western N. C.	8,660	Reading	4,390
Clearing	8,119	Manchester	4,289
Trenton	7,541	Boston	4,250
Raritan Valley	7,450	Richmond	4,211
Nashville	7,060	Providence	4,083
New Haven	6,823	Indianapolis	3,800
Northern N. J.	6,743	Fox Valley	3,712
Baltimore	6,710	St. Louis	3,392
Pittsburgh	6,630	San Francisco	3,357
Central Pa.	6,324	Central N. Y.	3,274
Milwaukee	6,023	Washington	3,176
Greensboro	5,908	Chicago	3,173
Columbus	5,839	Cleveland	3,085
Portland	5,783	Sacramento	2,431
Philadelphia	5,731	Wilkes-Barre	2,006
Dallas	5,719	New York	1,954
Montreal	5,709	Charlotte	1,559
Hudson Valley	5,635	Twin City	1,399
Birmingham	5,616	Bridgeport	910
Binghamton	5,550	Los Angeles	486
Lehigh Valley	5,445	New Orleans	304
Detroit	5,113	Louisville	248
Wilmington	5,017	Dayton	50
Atlanta	4,880	Stamford	50
Madison	4,817	Calumet	—
Hartford	4,736	Cincinnati	—

New Management Writing . . .

MODERN LABOR ECONOMICS, *by Pearce Davis and Gerald J. Matchett. Ronald Press, New York. $6.00.*

An introductory work to the field of labor relations and economics, with the emphasis on that most important phase of labor-management relations, collective bargaining. A valid springboard for other investigations, the interaction of management and unions is treated as representative of parallel problems in all instances of labor-management contact, including non-union situations. Some union history, where pertinent. A good refresher for the informed, with new material drawn from the current picture.

SELECTION FOR INDUSTRIAL LEADERSHIP, *by A. G. Arbous. Oxford University Press, Capetown, South Africa. 30s.*

The report of a study carried on in behalf of a large industrial corporation in South Africa to select suitably qualified young men for intensive training in various branches of administrative work. Publication of this work was prompted by the fact that for the first time a follow-up study was possible on a group which was unrestricted in range of ability. Of special interest to industrial psychologists and personnel men—a valuable insight into the statistical measurement of leadership ability for all others.

THE TECHNIQUES OF SUPERVISION, *by Alfred R. Lateiner in collaboration with I. E. Levine. National Foremen's Institute, New London, Conn. $4.00. (Paper bound, $2.00)*

Any responsible executive knows that among the prerequisites of a smoothly-functioning operation is employee morale, and that only from this do such essentials as cooperation and discipline stem. To aid those executives who are willing to apply themselves to the difficult task of earning the authority which accompanies the burden of responsibility, this work should be of great assistance. Primarily aimed at the middle-management level, but pertinent to all areas of command.

INTRODUCTION TO INDUSTRIAL MANAGEMENT, *by Franklin E. Folts. McGraw-Hill, New York. $6.50.*

The author, Professor of Industrial Management in Harvard University's famed Graduate School of Business Administration, has revised his standard text in the field thoroughly, with the emphasis on the managerial rather than the technical point of view. The fourth edition of Professor Folts' work stresses practical applications of theoretical principles as they are observable in industry today, and expresses the learn-by-doing conception of executive development. An outstanding, authoritative study.

CAPITAL AND OUTPUT TRENDS IN MANUFACTURING INDUSTRIES, *1880-1948, by Daniel Creamer, assisted by Martin Bernstein. Studies in Capital Formation and Financing, Occasional Paper 41, published by the National Bureau of Economic Research, Inc. $1.50.*

This is a clear, efficiently-written treatise on a subject always of concern to the American businessman: how capital is formed, what relation it has to the working operations of an industry.

Dr. Creamer centers most of his learned discussion on trends in the capital-output ratio; that is, the fraction in which the capital used in manufacturing is the numerator, and the output or product of the industry is the denominator. This follows usage that has become customary both in theoretical analysis emphasizing capital coefficients and in empirical projections using past ratios of capital to product applied to forward estimates of product levels.

The 104-page text is illuminated with charts and graphs. For the booklet, write Library of Congress, catalog number 54-6461.

DETERMINING THE BUSINESS OUTLOOK, *Edited by Herbert V. Prochnow. Harper & Brothers, New York. $6.50.*

A perennial question, given wide-scope treatment by men in education, industry and government. Over twenty economists furnish the student of economics, as well as the businessman wishing to get a grasp of the determinants of our financial structure, with a discussion of the normal short- and long-range fluctuations of the business picture, then go on to review the special influence of such factors as money supply, bonds, stocks, interest rates, savings, national productivity, and national and personal income. Charts and tables.

DEFENSE AGAINST RECESSION: POLICY FOR GREATER ECONOMIC STABILITY. *A Statement on National Policy by the Research and Policy Committee of the Committee for Economic Development. Text available from the Committee for Economic Development, 444 Madison Avenue, New York 22, N. Y.*

One of a series of statements issued by the CED Research and Policy Committee dealing with the problem of economic stability. The CED was formed in 1942 by a group of businessmen who felt confident that the exchange of information, education and action could avert the then-freely-predicted postwar depression. The background work for the present report began when CED cooperated with the U. S. Commerce Department in a study of economic problems following the reaching of a peak in the defense program. A thorough and thoughtful study of the current picture, which should help clarify the issues for foresighted businessmen.

SAM Chapter Membership

Counted as of May 1, 1954

CHAPTERS	TOTAL	CHAPTERS	TOTAL
Northern N. J.	420	Richmond	67
New York	408	Lehigh Valley	66
Philadelphia	338	Wilmington	66
Cincinnati	314	Columbus	65
Chicago	296	Hartford	65
Cleveland	281	Reading	65
Pittsburgh	243	Charlotte	62
Boston	230	Central Pa.	61
Lancaster	217	Birmingham	57
Washington	216	Clearing	56
Detroit	212	St. Louis	56
Milwaukee	157	Bridgeport	52
Los Angeles	143	Western Mass.	49
San Francisco	143	Knoxville	48
Worcester	131	Calumet	47
Dallas	120	Greenville	45
Western N. C.	110	Central N. Y.	44
Raritan Valley	105	Fox Valley	41
Hudson Valley	104	Louisville	39
Indianapolis	103	Twin City	39
Baltimore	101	New Orleans	38
Binghamton	98	Portland	37
Montreal	95	Manchester	36
New Haven	95	Sacramento	35
Greensboro	90	Wilkes-Barre	35
Dayton	86	Madison	32
Atlanta	71	Nashville	31
Providence	71	Stamford	22
Trenton	70	Non-Chapter	99
Kansas City	67	Non-Resident	83

New Products...

Incombustible **Fiberglas Acoustical Form Board** which performs four functions in poured-in place gypsum roof decks, has been announced by Owens-Corning Fiberglas Corporation. The new board makes a handsome tan ceiling, has superior thermal, acoustical insulation properties. . . .

The new Friden **Add-Punch machine** produces a standard adding machine tape and simultaneously as a by-product enters data on a ¾ inch code tape similar to that used by communication services. The code tape can be used in subsequent processing to eliminate many intermediate office operations such as punching and verifying machine cards, or recopying original sources of data. . . .

An entirely new **portable ten-inch radial saw** designed for easy movement from department to department in industry comes from the Delta Power Tool Division of Rockwell Mfg. Co. The new saw offers all the accuracy of larger saws, does away with extra expense in buying several larger saws, or for getting "outside help" for special departmental jobs. . . .

More **automation for punched-card routines** is possible with Remington Rand's Card-to-Tape and Tape-to-Card Converters. The new machines provide for the automatic transfer of data from punched cards into perforated tape and from the type into cards. The new idea is particularly suited to operations requiring constant exchange of accounting information between distant plants. . . .

A patent is pending on a **newly developed line of Self-Locking Machine Screw Nuts,** to sell at a fraction of the cost of other self-locking nuts. The newly designed Stop-Nuts lock washers and their cost of assembly. They are double chamfered and countersunk and assow of assembling either side up for automatic hopper assembly. The new Stop-Nuts are all metal, immune to effects of oil or water.

Heli-Coil Corporation is making **facilities available for making precision wire,** with cross sections of intricate or unusual design. The offer should interest spring manufacturers or wire mills without the precision equipment to produce "specials", or machine designers who need a wire form of metal not normally procurable. . . .

SAM Publications:

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2. **The Organizational Position of the Industrial Safety Engineer.** An exclusive study of why, where and when safety engineers are needed, and how to pick them. Illustrated with charts.
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for Industrial Engineers . . .

3. **Glossary of Terms** used in Methods, Time Study and Wage Incentives. Now in its second edition, this booklet has become the final authority for definitions and explanations of current terms.
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4. **A Fair Day's Work.** An analysis of rating judgments by Time Study men on 24 typical manufacturing and clerical operations shown in the SAM Performance Rating Films.
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5. **Reprints of outstanding articles from** ADVANCED MANAGEMENT
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(d) *Being Important Together*—C. A. Wimpfheimer
(e) *Executive Development Through Colleges* — Planty, Beach, Van Ark
(f) *How To Chair A Conference*—T. H. Nelson
(g) *Our Living Standards Can Go Up*—P. D. Foote
(h) *Personalities in Labor-Management Conflicts* — A. A. Imberman
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(j) *Test Analysis of Time Study Men*—C. A. Thomas
each $.25

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Experienced in the development, installation of work standards, production planning and control, methods study, cost estimating, and plant layout for product, process and job shop operations. Desires challenging position. BOX 380-W

INDUSTRIAL ENGINEER

M.E. degree and graduate work in Business Administration. Ten years wage incentives, methods and materials handling experience, in Electrical and food manufacturing industries. BOX 379-W

Fully Experienced Industrial Relations Man. Presently on staff of leading auto manufacturer. Capable of managing existing unit or establishing new department anywhere in U.S. LL.B. degree. Married, 31 years old. Reply Box No. 378-W

POSITIONS OPEN

INDUSTRIAL ENGINEER

For leading national manufacturer in Minnesota. Opportunity to work with consultant to establish and later maintain program. Prefer Mechanical Engineer graduate with minimum of 5 years heavy experience. In reply state education, experience and salary required. Box 385-0.

RATES: Classified insertions billed at $1.50 a line per issue for Positions Open, $1.00 for Positions Wanted. Lines average 30 characters. Boldface heading counts as two lines. There are 7 lines to an inch. Minimum insertion charge on five-line basis. Display ads at a minimum of 1½ inches. Copy required not later than the 12th of month preceding publication date.

Answers to box number ads should be addressed to given box number, care of ADVANCED MANAGEMENT, 74 Fifth Ave., New York 11, N. Y.